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A sense of home: a cultural geography of the Leschenault Estuary district: Report

Sandra Wooltorton
Edith Cowan University

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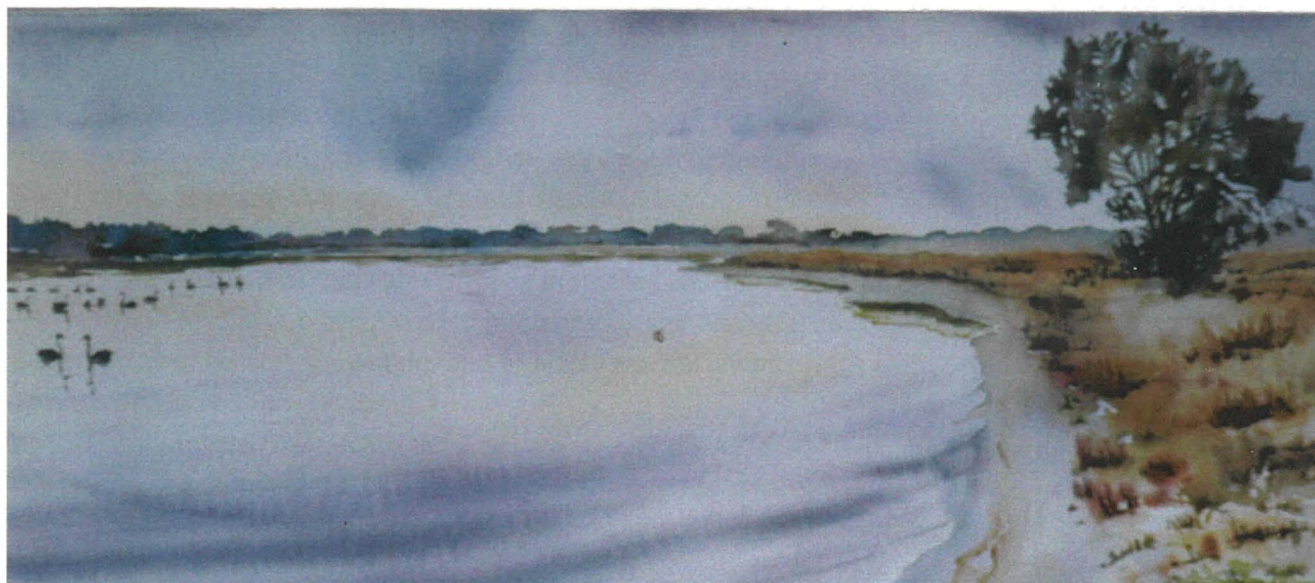
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A Sense of Home: A Cultural Geography of the Leschenault Estuary District

Report

Sandra Wooltorton

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History Editor: Phyllis Barnes



Vittoria Bay Autumn. Painting by Sue Kalab.

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There are big issues in society that cannot be solved through a single disciplinary perspective, because the problem is shared – such as the question of how to restore health to an estuary. These problems are often referred to as ‘wicked problems’¹ because they need creative, interdisciplinary, collaborative, multi-scaled solutions. This project was designed with these principles in mind. It has involved amateur and professional geographers, photographers, artists, ecologists, scientists, social scientists, historians, journalists, elders, linguists, radio announcers, librarians, environmental educators, researchers and teachers – and many meetings.

Table of Contents

Noongar Language.....	7
Executive Summary	8
Introduction.....	10
1.1 Methodology	12
1.1.1 Goal and Aims.....	12
1.1.2 Philosophy and Theory	13
1.1.3 Conceptual Framework	14
1.2 Significance	15
1.2.1 Significance and Innovation.....	15
1.2.2 Geographical Scope of the Research.....	16
1.3 Geographical Context	18
1.3.1 The Spatial and Ecological Character of the Leschenault Estuary.....	19
1.3.2 A Short Socio-Economic Geography of the Leschenault Estuary District.....	21
1.3.3 Conclusion	26
Place-Based Social Values in Noongar Times	28
2.1 <i>Elaap –Karlaloodjar</i> : Home Place	32
2.1.1 <i>Elaap – Boodjar</i> and <i>Moort</i> (Place and Family)	33
2.1.2 <i>Elaap – Boodjar</i> : Territory	35
2.1.3 <i>Karlaloodjar Elaap</i> : Leschenault.....	36
2.2 <i>Moort Elaap</i> – Living In Relation to <i>Boodjar</i>	37
2.2.1 Ecological Knowledge of <i>Boodjar</i> – Nourishing Terrain	37
2.2.2 Dancing Up Nature – Kinship With <i>Boodjar</i>	40
2.2.3 Honouring Place	41
2.3 <i>Katitjiny</i> : Knowing.....	42
2.3.1 A Social Ecology of Place	42

¹ As described by Brown, Harris & Russell (2010).

2.3.2 Values – <i>Elaap Derbal, Karlaboodjar</i>	44
2.3.3 Interjection: <i>Kura, Yeyi, Boordawan</i> : Past, Present and future.....	47
Place-based social values in Colonial times.....	48
3.1 People, Place and Values.....	50
3.1.1 Sources	50
3.1.2 Encounters with Place	51
3.2 An <i>Elaap</i> Sense of Home – An Immigrant Sense of Unfamiliarity	55
3.2.1 Place for Profit.....	56
3.2.2 Backgrounding of Place	60
3.2.3 Linking Two Stories of Place	62
3.3 Conclusion	63
3.3.1 Values	63
3.3.2 Photographs and Brief Summary of Changes - Leschenault District, 1890s, 1900s.....	65
4.1 Research Method	80
4.1.1 Literature Review: Method	80
4.2 The Instrument and Implementation	83
4.1 The Quantitative Study.....	84
4.2.1 Demographic Data	85
4.2.2 Place-Based Social Values.....	85
4.2.3 Priorities and Attitudes.....	87
4.2.4 Discussion and Conclusion.....	88
4.3 The Qualitative Study	90
4.3.1 Place-Based Social Values.....	90
4.3.2 Concerns About Places around the Leschenault Estuary and Inlet.....	92
4.3.3 Aspirations for the Estuary and Inlet.....	93
4.3.4 Conclusion: Place-Based Social Values of the Leschenault District (2012)	94
Conclusion: A Sense of Home in the Leschenault Estuary and Inlet District.....	96
Recommendations for Further Research	97
Epilogue 1: Coming Home to Place in the Leschenault Estuary – A Writer’s Reflection.....	98
Epilogue 2: Cries of the <i>Derbal Elaap</i> : Where are you now, my people?	100
References	101
Appendix One: Copy of Survey Instrument	104
Appendix Two: Making a <i>Bwok</i> or <i>Booga</i> (Coat)	115

List of Plates, Tables and Figures

Plate 1: The sub-catchment boundaries of the Leschenault Catchment.	16
Plate 2. Map showing Greater Bunbury Regional Scheme: GBRs Sheet 12.	17
Plate 3. Map showing Greater Bunbury Regional Scheme: GBRs Sheet 9.	18
Plate 4: Map showing the City of Bunbury boundaries.	23
Plate 5: Land uses with nutrient point sources in the Leschenault Catchment.	25
Plate 6: Visual Representation of Factors Affecting the Leschenault Estuary.	27
Plate 7: Copy of an 1829 Leschenault map by Lt. Preston, showing the whole estuarine water body.	29
Plate 8: Map of South West Section of “Tribal Boundaries in Aboriginal Australia” (Tindale, 1974).	35
Plate 9: Recent image showing the southern part of the Estuary with the Leschenault Peninsula in the background, and the Bila Borrigup snaking its way across the coastal plain in the foreground.	44
Plate 10: Eastern portion of Australia (Arrowsmith, 1841).	48
Plate 11: Copy of part of an article from the <i>Perth Gazette and Western Australian Journal</i> , 1833.	49
Plate 12: Copy of the wedding notice of George Eliot to Louisa Clifton, in the <i>Inquirer: Perth WA</i> , 1842.	49
Plate 13: Copy of a Quarter Sessions Court Report, from <i>The Perth Gazette and Independent Journal of Politics and News</i> , 1850.	49
Plate 14: Painting by Louisa Clifton, titled: <i>View of Leschenault Bay 1841</i> .	51
Plate 15. Copy of the 1841 map surveyed by Captain Stokes RN.	53
Plate 16. <i>Impression of the settlement c1840</i> (Barnes, 2001, p.28).	54
Plate 17: Cutting from image titled: <i>Section from Wheeler’s Bunbury 1891</i> .	65
Plate 18: Picture is titled: <i>Three Bunbury Aborigines: Bobby, Sarah and Maggie</i> .	66
Plate 19: Town Centre Detail from Wheeler’s 1891.	67
Plate 20: Section of map titled: Leschenault Inlet 1898.	68
Plate 21: Part of a 1905 Bunbury Land Agency map with Noongar place-names.	69
Plates 22: 1911 Postcards of Paddy’s Blunders (Leschenault Inlet, Bunbury).	70
Plate 23: Picture titled: <i>Valdemar at Turkey Point Jetty and Boat C1922</i> .	71
Plate 24: Picture titled: <i>Valdemar at Turkey Point Jetty</i> .	71
Plate 25: Photograph taken at Turkey Point, titled: <i>Two ladies and a man, 1922</i> .	72
Plate 26: Map titled <i>Street plan of Bunbury by Steere & Clarke, Estate Agents</i> .	72
Plate 27: Aerial photograph entitled: ‘Mouth’, dated 9/2/1958.	73
Plate 28: Image shows the Leschenault Estuary in the late 1970s.	74
Plate 29: Image shows the newly completed Inner Harbour in the late 1970s.	74
Plate 30: The Cut (2011), engineered in 1951.	75
Plate 31: Aerial view of estuary Leschenault Peninsula, which separates the Estuary from the ocean.	75
Plate 32: Map shows Leschenault Estuary and Inlet, adapted from LIMA (1993).	79
Table 1: Noongar Seasons (Bates 1985).	34
Table 2: Summary of Alterations to the Leschenault Estuary.	76
Table 3: Survey Respondents’ Sense of Place Values (Quantitative Extraction).	87
Table 4: Qualitative Interpretation of Place-Based Social Values of Leschenault	94
Figure 1: Conceptual Framework as Networks of Relationships.	14
Figure 2: Engineered Alterations to the Estuary Over Time (Semeniuk, 2000).	20
Figure 3: Graph Showing Question 22 Responses.	88

Noongar² Language

In this report Noongar language was used where needed because it made some place-based concepts easier to describe. The Bunbury Noongar Language Centre's orthography (lettering system) was used for the purpose. The exception to the rule was that direct quotes precisely reproduced the spelling used in the original source. In the report, an English translation of all Noongar words used is provided in text.

Noongar Wordlist for Elaap Karlaboodja

Elaap – Noongar name for Leschenault District; also name of the people of the Leschenault District.

Babbingur – totem.

Bidi – path or trail, or veins.

Bila or *bilya* – river.

Bilgur – river people.

Bila Barajillup – Preston River, near the mouth.

Bila Borrigup – Collie River, near the mouth.

Birdiya (teacher or elder)

Booga or *bwok* – coat made from skins such as possum or small kangaroo.

Boodjar – a Noongar holistic concept of land or place that means full of life; ecosystem (and therefore people). Nourishing terrain.

Boodjari – pregnant, full of life.

Burong wongi – the language of the Elaap people.

Buyungur – people of the foothills, or rocky country.

Derbalung – ... of the place where the salt water meets the freshwater (estuary people).

Gwenilup – place of the quenda.

Kanya – sacred.

Karl – fire, home. Home is where the *birdiya* can set fire to *boodjar*.

Karlap – home-place or fire place.

Karlaboodjar – shared property in land. The *boodjar* one is co-responsible for.

Karlapgur – kin who share in the *karlaboodjar*. People of the place, kin of the place.

Karlamaya – home hut; *karlamaya mandjar* – extended family huts built in a cluster.

Katitjiny – learning, speaking, knowing.

Kobungur – older brother.

Kongan – uncle.

Koornt – hut; often covered with green balga (grass tree) leaves for waterproofing.

Kaneang – of the west. *Elaap* people were regarded as *Kaneang Bibbulmen* (Bates, 1985).

Mandjar – meeting or festival, sometimes for trade (eg. *Mandjarup*).

Manitjmat – cockatoo lineage (moiety).

Maya – hut, often made from tea-tree or paperbark. *Maya* is also the name for a preferred species of tea-tree bark for hut construction.

Mardalup – foot-place, such as a ford or river crossing. There is a *Mardalup* at the mouth of the Collie River.

Moort – family or kinship relatives.

Wordungmat – crow lineage (moiety).

Yallor gannow – yallor is a dance, and gannow are steps. *Yargril* – charcoal.

² Unless quoting a writer such as Collard (1994) who uses the spelling *Nyungar*, Noongar will be used since that is the preference of the Dandjoo Moordiyup Dabakarn Bunbury Noongar Language and Culture Centre.

Executive Summary

In 2012, a project was implemented to determine the place-based social values of the people of the Leschenault Estuary district. The project included a historical study, a literature review, a survey with quantitative and qualitative questions, targeted community engagement (five focus groups, six individual interviews) and a photo-elicitation study with a group of high school children.

Research Question

What is history of the relationship between people and place in the Leschenault Estuary District, and what is the relationship in 2012? What were, and what are the place-based social values of the population?

History

This land is old, rivers are old and stories are old. The South West has been continuously occupied for over 45,000 years. However the Leschenault estuarine system is young, formed around 8,000 years ago. The *Elaap* are Wardandi Noongar people who lived around the Leschenault Inlet and Estuary. The *Elaap* people cared for and highly valued the district. They saw it as alive, as life-sustaining, as nourishing and as imbued with spirit. Landscape-embedded stories unified heritage, culture, place and people. Stories of the estuary, rivers and ecosystem explained life and place.

The immigrants valued the estuary for its life-sustaining qualities as well as for its aesthetic values, its recreational values and its biodiversity values. Some acknowledged its spiritual values. They also recognised two different values in the district. They could produce the foods and lifestyle to which they had been accustomed, and they saw place as property for economic gain.

Biogeographical/Socio-economic Context

Over the last 50 years in the Leschenault Catchment, total annual rainfall has decreased and total area of forest and natural open space has diminished with corresponding reduction in native fauna and flora. The human population has been rising and industrial and agricultural activity has been increasing along with a corresponding increase in nutrient and contaminant in catchment flows. Water extraction continues to increase. The Estuary³ is showing signs of stress such as occasional fish, dolphin and swan deaths, macro-algal blooms and evidence of reduction in fish, prawn and crab stocks over time. The actual risk to estuarine health is difficult to quantify, but trends show that risk increases with time.

Quantitative Survey Results

Of the 753 surveys submitted, on average 620 completed answers were received against each question. Responses comprised roughly similar numbers of males and females. About three quarters of the respondents were over 36 years of age. Over half of the respondents lived within two kilometres of the Estuary. Over half of the respondents lived in the residential corridor east of the Leschenault Estuary. The respondents were a mixed group of newer and longer-term residents of the district. Sixty-four percent of the respondents were professionals, managers or retired.

Eighty-four percent of respondents said they cherish the Estuary. All respondents indicated that they value the estuarine system for its natural open space, while other popular values were: being close to nature, dolphin habitat and recreational values. Ninety-five percent of respondents said they wanted the environment considered in all decision-making.

More than 80% of respondents use the Estuary or Inlet for walking, jogging or running and foreshore recreation. More than 50% of respondents also use the Estuary for walking the dog, crabbing, contemplation or meditation, bird-watching, fishing, photography or artistic pursuits, kayaking, canoeing or rowing, swimming, motor-boating, camping and outdoor pursuits. Sixty-seven percent of respondents reported that they did not have sufficient local history knowledge.

³ Used by itself, *Estuary* refers to the Leschenault Estuary and/or the Leschenault Inlet.

Forty-five percent of respondents said their highest priority was improved environmental condition. Eighteen percent of the respondent group believe the Estuary waterways to be in poor condition, 41% believe them to be in average condition, and 26% believe them to be in good condition. Most respondents would support stronger policies to improve the Estuary, and 80% of the respondents said they would be happy to make individual changes within limits indicating time pressures as a deterrent to more involvement. Sixty-nine percent of respondents believe that responsibility for improving the Estuary should be shared between the various jurisdictions.

Qualitative Outcomes

A range of place-based social values were described by the respondents. People recognise intrinsic values such as biodiversity, wilderness and power of place. Cultural values, which indicate use to humans, include: aesthetic, iconic, heritage, recreation, home-place, intergenerational, community, therapeutic and economic values. Ecosystem health was an aspiration noted by the majority of respondents.

Respondents depicted their favourite estuarine places with affection, describing care and personal relationship. Commonly listed places included the Cut, which people appreciate for dolphin visitation, boating, fishing, surfing and memories. The Leschenault Peninsula was highly valued for its heritage values, its accessibility and signage, its peacefulness, its biodiversity and wilderness values, its aesthetic values, its many species of birds and its fishing. The Eastern banks of the Estuary including Cathedral Avenue, Ridley Place and the Collie River mouth were valued as places for reflection, environmental connection and open space. People wrote that they cherished it for its beauty, for its sense of natural art in the trees, for its historic vista and for its sense of sacredness. The circuit around the Leschenault Inlet was viewed as iconic and was highly valued for aesthetic qualities, for its biodiversity, and for its heritage.

The photo-elicitation study with 14 year olds showed a great appreciation of the district's aesthetic and biodiversity values, and sustainable development. Respondents were critical that economic values dominate decision-making and their highest value was natural open space, which they request is preserved for the future.

Coming Home to Place - Conclusion

People have valued the life-sustaining qualities of the Leschenault Estuary District for thousands of years. Over time, economically-related activities have increased the risk of water quality deterioration that now threatens other values held by the current population.

Respondents to the 2012 research project cherished the estuary and upheld intrinsic and cultural values of place. They highly valued its natural open space, aesthetic qualities and tranquillity. Their main concerns were water quality, habitat deterioration including litter and vandalism, and siltation/sedimentation. Their aspiration was to improve ecological health, particularly water quality. Some people preferred to do this via legislation, education and changed behaviours, whereas others preferred engineering solutions because they are quicker.

There are, once again, landscape-embedded stories, and people said they see the Leschenault Estuary and Inlet as 'home' and as treasured icons of Bunbury and Australind.

Recommendations

The majority of respondents favoured policy change, changed behaviours and education for improving ecosystem health and water quality. A number of respondents also proposed a variety of engineering solutions for immediate improvement. Ideas included a new cut to the north of the Estuary and various linkages between the Preston, the Inner Harbour and the Inlet.

Respondents asked for the upgrading of public amenities such as toilet blocks, picnic facilities and shade provision. There was a significant request for improved local environmental education in schools, and for community members in communicative spaces such as signs and news media.

INTRODUCTION

The introduction includes a short introduction to place, a brief overview of the study and a review of the literature pertaining to the biological and socio-economic geography of the estuarine system.



Collie River Mouth. Photograph: Chris Tate

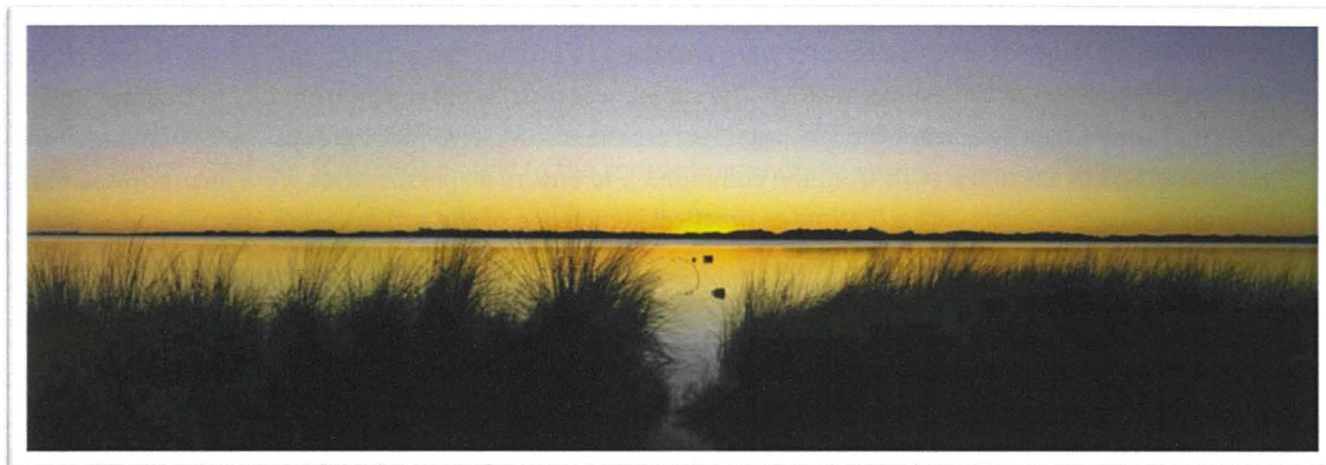


Leschenault Estuary and Peninsula (South) and Bunbury. Photograph: www.leschenaultcc.com



Mangrove Cove. Photograph: Terry Wooltorton

This land is old, rivers are old and stories are old. The South West has been continuously occupied for over 45,000 years. However the Leschenault estuarine system is young, formed around 8,000 ago. The *Elaap* are Noongar⁴ people who lived in the Leschenault District⁵. The *Elaap* people cared for and highly valued the district. They saw it as alive, as life-sustaining, as nourishing and as imbued with spirit. Landscape-embedded stories unified heritage, culture, place and people. Stories of the estuary and its rivers explained all of life; people existed within a living, animated place.



Leschenault Estuary, Sunset. Photograph: Sean Ellingham.

45,000 years passed by. Then only two hundred years ago – a mere blink of the eye on the geological time scale – the colonisers arrived. In the words of historian Phyllis Barnes:

...the locals had been clearing the land for centuries by burning to encourage new growth and these park-like spaces with good herbage appealed to settlers who promptly settled on them (Barnes, 2013b).

A new chapter in the history of the *Derbal*⁶ began. Soon after arriving, the colonisers renamed many places – including the waterways. They brought a new system of ownership and social hierarchy, and the desire for foreign foods which required different food production systems. They brought an unfamiliar attitude to the place. Rather than seeing it as living, or animated – they saw it as property for economic gain.

Another hundred and fifty years passed. During that time population growth associated with agricultural, industrial and residential expansion proceeded apace with economic development. Today, the waterways are beginning to show signs of ecological strain at the same time as mounting evidence that climate change is reducing rainfall – adding to the range of stressors on the Leschenault Catchment and thus, the Estuary and Inlet. From the perspective of geological time, these stressors began very recently.

There is now considerable community, industry and government engagement with these issues, all aiming to research and address issues pertaining to water quality and ecological health in different, targeted ways. The current study of the place-based social values of the population is part of this agenda.

⁴ Noongar are the Aboriginal people from South West WA.

⁵ In this report, unless otherwise stated, Leschenault refers to the Leschenault Estuary and Inlet District. There is a historical precedent for this.

⁶ *Derbal* means estuary – where the fresh water meets the salt water.

Introduction to the Research

A place-based social values study was conducted with the population of the Leschenault District in 2012. The project included a literature review, a historical study, a survey with quantitative and qualitative questions, targeted community engagement (five focus groups and six individual interviews) as well as a photo-elicitation study with a group of high school children. All projects were interconnected to produce rich data about place-based social values.

The historical study used a historical ethno-ecology methodology to analyse historic journals and secondary sources. A wide range of research reports were reviewed to produce an account of the socio-economic and biophysical condition of the estuary district. The survey was distributed online from July to October 2012. Hard copies were also available from key points across the district. Five focus groups were conducted with representatives of specific groups from the community, to ensure all perspectives were incorporated into the project. Six individuals with a lifetime of practical knowledge of the estuary were interviewed to add depth to the data. Finally, school students from a local high school used cameras to assist with the production of values statements, during excursions to three destinations around the Estuary and Inlet.

This report is presented in five parts beginning with this chapter which is an introduction. It includes the methodology and a literature review to set the 2012 geographical context. The chapter is followed by the historical study, the 2012 studies organised into quantitative and qualitative findings and the conclusion. A creative response forms an epilogue.

1.1 Methodology

The purpose of this section is to introduce the methodological frameworks for the study. It includes the aims, philosophy, epistemology and theoretical and conceptual frameworks.

1.1.1 Goal and Aims

The goal of this research was to understand the relationship between people and place in the Leschenault Inlet/Estuary over time including 2012, in order to explain the current condition of the waterways. To do this, a condensed geography of the Leschenault District in 2012 was prepared. Following this, a reinterpretation of historical sources was conducted to illustrate the relationship between people and place prior to and at the time of colonization. After this, a brief synopsis of the period 1850 – 1980 was assembled, and then an in-depth quantitative and qualitative study of the population in 2012 was implemented.

The aims were:

- a) To prepare a condensed geography of the Leschenault Estuary and its district, in order to pose key questions about the relationship between people and place;
- b) To describe the relationship between the people of the Leschenault Estuary district up to 1850, to explicate the nature of a caring, place-based relationship and to illustrate the change in the people-place relationship between Noongar times and during the colonial years together with the trajectory this set up;
- c) To conduct an in-depth quantitative and qualitative study of the people of the Leschenault District in 2012;
- d) To prepare a brief narrative for the Leschenault Estuary district that illustrates the effect of people as agents of change over time.

The overarching research question was: What is the history and quality of the relationship between people and place in the Leschenault Estuary district? To answer it, an investigation was conducted into the place-based socio-cultural values to the population of the Leschenault District over time. The specific question was: How can we theorize the effect of these relationships on the estuary?

1.1.2 Philosophy and Theory

The study was underpinned by ecological philosophy⁷, which sees nature and culture as interdependent and acknowledges the ecosystem as the focus of the bioregion (Abram, 1996, 2010). The following three quotes serve to elaborate these ideas:

The [oral; indigenous] story follows a kind of perceptual logic very different from the abstract logic we learned at school. It attends closely to the sensuous play of the world...(Abram, 2010, p.298)

All of these dodges, all of these ways of disparaging material nature or of aiming ourselves elsewhere, enable us to avoid the vulnerability of real relationship with other persons and places in the depths of this unmasterable world (Abram, 2010, p.302).

Corporeal sensations, feelings, our animal propensity to blend with our surroundings and be altered by them, our bedazzlement by birdsong and our susceptibility to the moon: none of these ought to be viewed as antithetical to clear thought... This ambiguous order cannot be superseded by reason and the careful practice of our sciences... (Abram, 2010, p.307)

As evidenced by the above quotes ecological philosophy⁸ seeks a way of being with the earth that enacts our interrelationship with it rather than distancing us from it. Abram shows that our bodies enable us to relate sensuously to the ecosphere in ways that peoples have always done. However we moderns learned to think in abstract ways whilst hyper-separating and excluding, denying or avoiding experience. This is a stance which diminishes the worth of experience with the environment, and ultimately devalues the environment.

Abram's point is that philosophically and considering the state of the environment, we need both clear abstract thought and functional, sensuous bodies working together (1996, 2010). We need to find alternative ways to explain ourselves so that the earth we inhabit remains livable, since language – in the sense of discourse and function – is also an explanation for our downfall⁹, while direct experience and storying provide ways to incorporate the sensuous with the abstract. The philosophy he outlines offers elements of compatibility between Indigenous and postmodern worldviews.

Therefore taking this philosophical position into the study, an important theoretical underpinning is the work by Heron (1996) which asserts that as well as the abstract, empirical form of knowing normally assumed in

⁷ The requirement for brevity prevents a comprehensive overview of ecological philosophy. (However, see Wooltorton (2004, chapters 2 to 5). Abram's work has been selected for use in this study because of his deep, insightful analysis of the relationship between the animal senses of the human body and the breathing earth.)

⁸ From the point of view of phenomenological ecological philosophers such as Abram (1996, 2010), Shaw (2011), Harding (2006) and Turner (2005).

⁹ In the sense where language functions to determine thought (Lee, 1996; Whorf, 1956), the impact of discourse is assumed meaning, in this case ideas about the place of humans in nature.

the business-as-usual view of the world, there are other ways of knowing such as that evidenced by arts and performative activities. This forms part of a socially critical theoretical framework (Chouinard, 2008) which will be used to address the research question because:

- the overt intention of this study is to create the conditions in which progressive change can occur;
- in addition to current trends there are alternative possibilities for the Leschenault Estuary, and these need to be anticipated and created; and
- the study is intended to connect with efforts to preserve the estuary.

1.1.3 Conceptual Framework

The conceptual framework for the research illustrates the perspectives being assumed at the outset. It uses the metaphor of a network of relationships which acknowledges that:

- the estuary is a bio-cultural landscape (rather than being either a biophysical or a cultural one);
- that sequential phases or epochs of people assume their biophysical and cultural heritage and accordingly, leave a legacy for their descendents in the form of knowledge, symbols and place (Whittlesey, 1929);
- that futures are created and can be anticipated; and
- that people are part of nature; and any perceived separation is a social and linguistic construction.

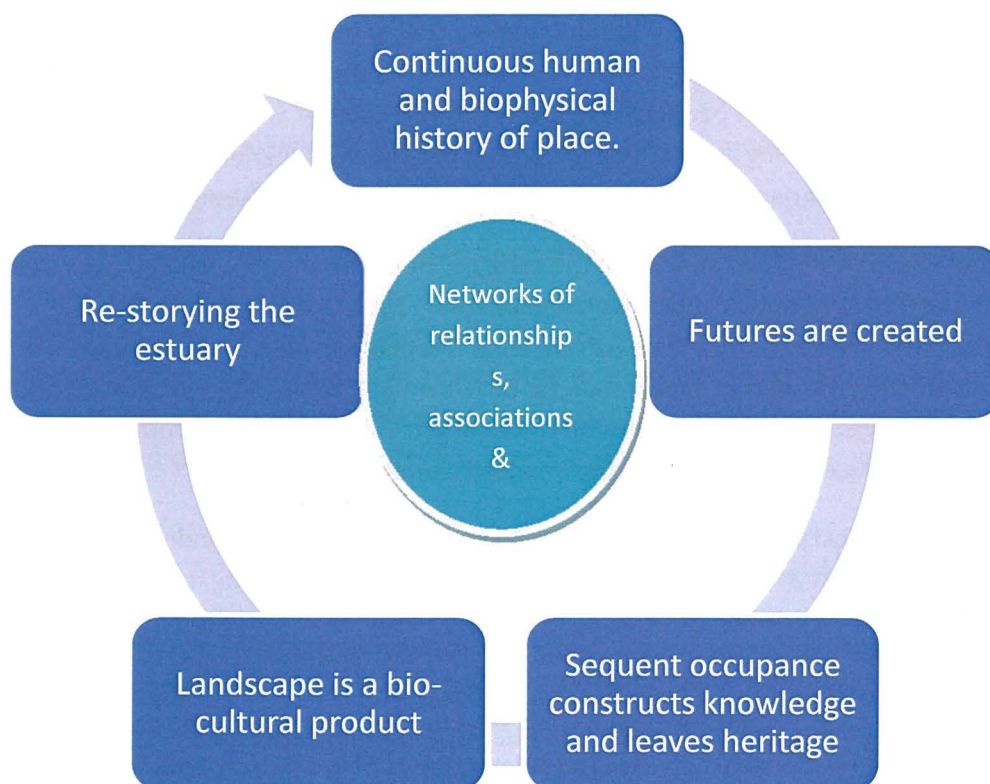


Figure 1: Conceptual Framework as Networks of Relationships.

1.2 Significance

The purpose of this section was to highlight the significance of the research and outline its geographical scope.

1.2.1 Significance and Innovation

The health of the estuary is under stress due to intensifying socio-economic pressures, increased nutrient and contaminant loads, increased water extraction and reducing rainfall. Knowledge of the ways in which the population understands and has understood the estuary and its district over time, can assist decision-making in relation to the estuary. Until recently, work on place-based social values in the Leschenault Catchment has been special-purpose and narrow in a spatial and disciplinary sense (for example Beckwith Environmental Planning, 2008, which relates to two parts of the estuarine section of the Collie River). The local significance of the study is in its contribution to decision-making concerning the estuary and its environment.

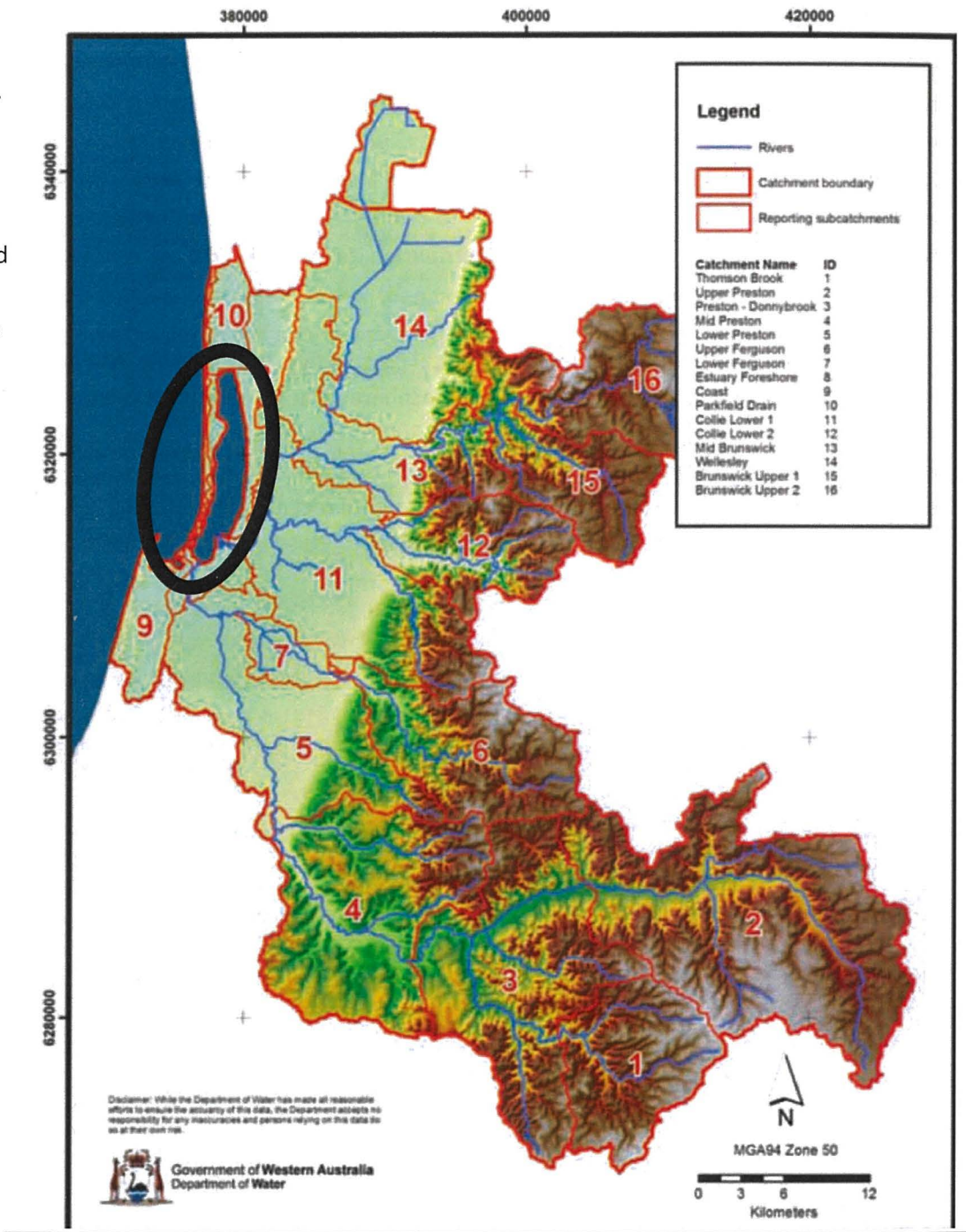
The study is also significant from a methodological perspective. In studies by land managers and researchers, people are often treated as separate from the biosphere rather than as part of biodiversity (Convention on Wetlands [Ramsar 1971] Culture Working Group, 2008). This is because of the socially constructed view of people of the western world as separate from nature due to the history and development of western thought (Giblett, 2011; Plumwood, 2002). Therefore until recently research has looked for discontinuities and separations rather than continuities and connections (Head, 2008), which this research will investigate.

The ways in which Australians value place from the point of view of philosophy are replete in the ecological philosophy literature (for example Mathews, 2005; Plumwood, 2002); and in the Aboriginal studies literature (for example Bird Rose, 1996; Head, 2000; Weir, 2009). A wide variety of accounts of individual valuing of place is available in narrative form (for example Ward, 2011). However landscape-scale place-based social values studies of whole populations from a historical and a contemporary perspective are still relatively new in Australia. Substantial works by Brown (for example G. Brown & Brabyn, 2012; G. Brown & Weber, 2012; Pocewicz, Nielsen-Pincus, Brown, & Schnitzer, In Review) using Public Participation Geographic Information Systems, and the study by Research Solutions (2007) on the Swan and Canning Rivers stand out from a geographic point of view.

Turning attention to international studies, a range of place-based socio-cultural values work has been implemented from an ecological perspective through the notion of ecosystem services and wise-use of wetlands (for example Ramsar Convention Secretariat, 2008; Ramsar COP09, 2005) and a variety of ways of economically quantifying these to illustrate social value have been applied (for example Horwitz, Sommer, & Thomas, Manuscript). A number of place-based social values studies have been used for purposes such as forest management (for example Fagerholm & Kayhko, 2009; Gunderson, Watson, Nelson, & Titre, 2004). Many international organizations such as the WorldWatch Institute are now emphasizing the cultural relationship between people and place, with a specific focus on promotion of sustainability attributes in a society and minimizing ecologically damaging ones (Gardner, 2010). However, few interdisciplinary place-based studies of the socio-cultural values of regional populations from a historical and a contemporary perspective have been completed in Australia or internationally, although some are currently in process, particularly in Chesapeake Bay, USA (for example Dennison, Carruthers, Thomas, & Glibert, 2004; Scientific and Technical Advisory Committee, 2011). This Leschenault cultural geography project forms such an endeavour.

In a nutshell, the research is of local significance because of its value to decision-makers concerned with the Leschenault Estuary/Inlet; and of methodological significance because of its philosophical perspective and because there are still relatively few interdisciplinary studies of whole populations and their historic and contemporary relationships with place, particularly wetlands.

Plate 1: The sub-catchment boundaries of the Leschenault Catchment. The area outlined in black shows the extent of the study area. Map is from Hugues-dit-Ciles (2011b, p.9).

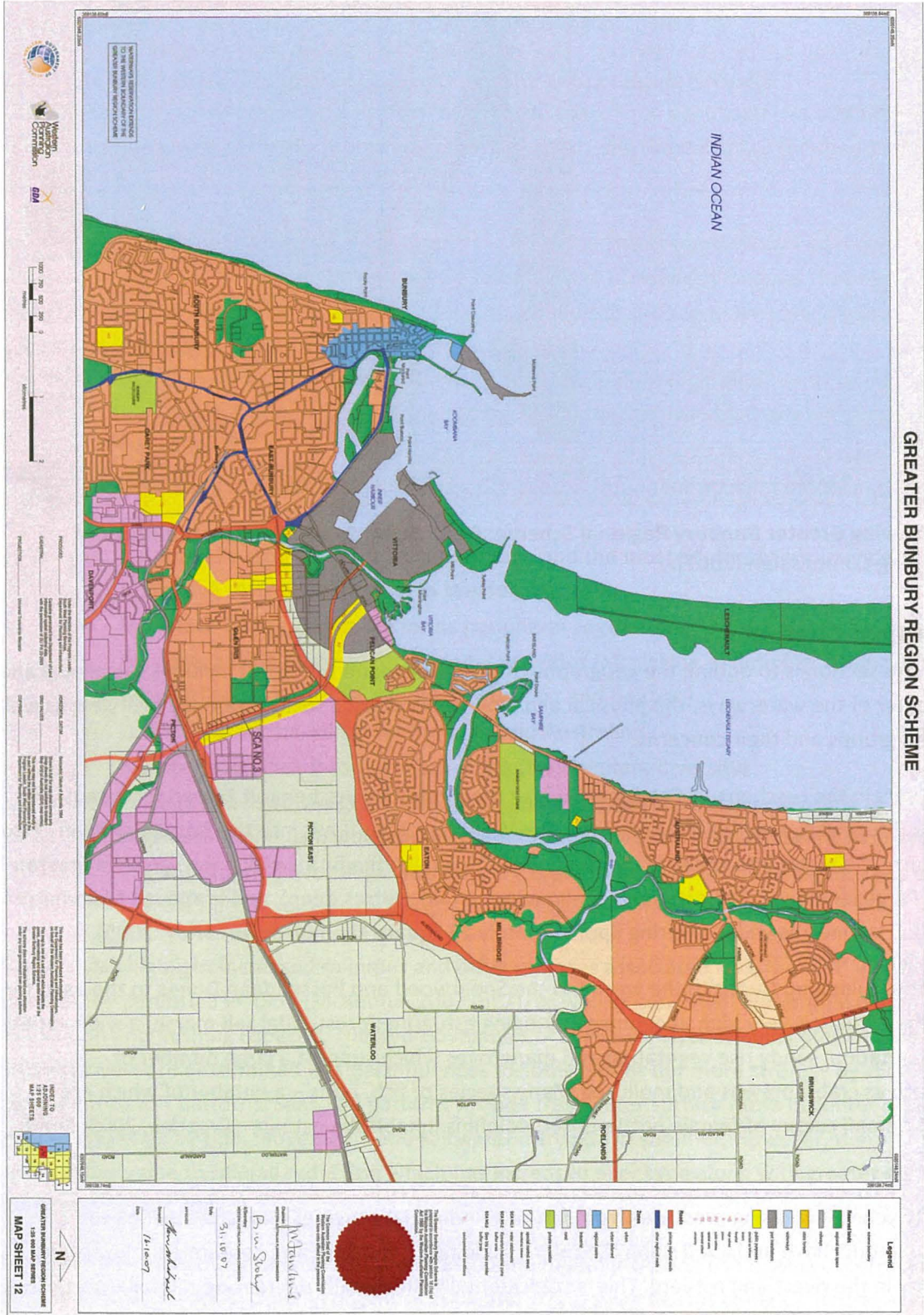


1.2.2 Geographical Scope of the Research

This study is limited to the Leschenault District to the coast on the west, several kilometres north, and about five kilometres east and south of the waterways. It takes in parts of the Parkfield, Estuary Foreshore, Lower Collie, Coast and Lower Preston Sub-Catchments. Plate one shows the Leschenault Catchment with the sub-catchments marked. The approximate spatial focus of the study is marked in black. The town-site in relation to the estuary/inlet is shown in plates two and three overleaf.

It is not possible to study this limited area in isolation of the social and ecological processes at the wider range of scales that produced it, therefore data from the Leschenault Catchment and elsewhere will be used as required (Scott, 2004, pp. 30-31). Beyond the Leschenault Estuary/Inlet and the marked hinterland, no claims for generalisability are made.

Plate 2. Map showing Greater Bunbury Regional Scheme: GBR Sheet 12, produced by the Western Australian Planning Commission (2007). Adjoining map is overleaf.



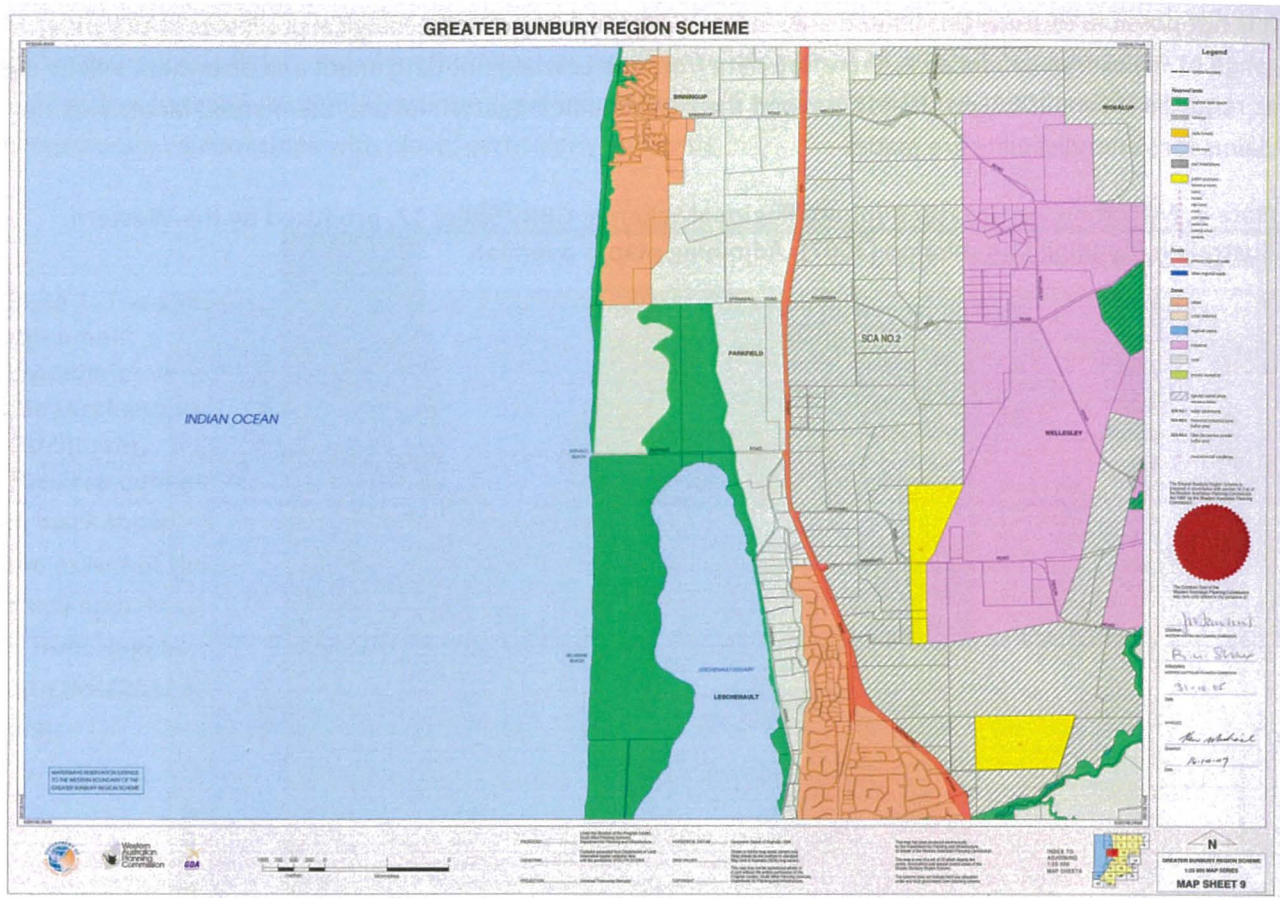


Plate 3. Map showing Greater Bunbury Regional Scheme: GBRs Sheet 9, produced by the Western Australian Planning Commission (2007).

1.3 Geographical Context

The purpose of this section is to outline the geography of the Leschenault District. It includes the spatial and ecological character of the waterways, the physical and biological values, a socio-economic overview as well as environmental groups and their concerns.

There are five rivers in the Leschenault Catchment which drain into the Leschenault Estuarine System: the Wellesley, Collie, Brunswick, Preston and Ferguson. The Wellesley River flows into the Brunswick River. Two rivers actually carry the water into the estuary: the Collie (into which the Brunswick flows) and the Preston (into which the Ferguson flows). The estuary is shallow (up to two metres deep), and is about 14 kilometres long and 1.5 to 2.5 kilometres wide, covering approximately 27 square kilometres (Brearley, 2005).

Lying between the Quindalup Dunes to the west and the Spearwood and Bassendean Dunes to the east, the biodiversity of the estuary is very high. It comprises fringing estuarine forest, tidal salt marsh, a wide variety of freshwater vegetation, sandy rise vegetation and mangroves which support a large number of invertebrates such as crabs, prawns and molluscs. Many species of fish, birds – a number of which are migratory – and a small colony of female bottle-nosed dolphins inhabit the estuary (Brearley, 2005; Smith, 2012, pp. 84, 85).

Over the last fifty years, increasing pressures from farming, industrial activities and land-clearing for suburban developments have impacted upon the rivers, building up nutrient and contaminant levels and affecting turbidity in the rivers and estuary. This is coincidental with steadily decreasing rainfall over time, as

the catchment now receives on average 15% less rain than it did fifty years ago (Macaulay, 2007). In fact it is likely that since the mid 1970s the South West has experienced greater statistically evident impacts from climate change than anywhere else in the world (McFarlane, 2005, pp. 19-21). Consequently stress to estuarine health is now evident with such outcomes as odours noticed by residents, algal blooms, fish and dolphin deaths and decline in fish stocks (Department of Fisheries, 2012; Hugues-dit-Ciles, 2011b, pp. 32, 59-61; Smith, 2012). There are large economic costs involved in rectifying this situation, and considerable public debate as to the extent and nature of the restoration that should be carried out (Department of Fisheries, 2012; Hugues-dit-Ciles, 2011b). Further elaboration is provided below.

1.3.1 The Spatial and Ecological Character of the Leschenault Estuary

This sub-section reviews recent studies to illustrate the spatial and ecological character of the Leschenault Estuary. Its purpose is to highlight both its ecological values and the nature of the threats to its long-term health.

A very large number of studies have been carried out on the Leschenault Estuary over the last thirty or so years. McKenna (2007) followed by Hugues-dit-Ciles (2011b) condensed many of these to prepare major reports on the environmental condition of the estuary and the surface waters feeding into it. Hugues-dit-Ciles states the following about the Estuary. It:

- is important for supporting migratory birds along their flight paths with 18 species listed under two migratory bird agreements: the Japan – Australia, and the China – Australia (JAMBA and CAMBA).
- provides habitat for breeding and a dry-season refuge for many numbers and species of water birds.
- is nationally significant for its geoheritage and the most-southerly occurrence of the white mangrove (*Avicennia marina*) in Western Australia.
- is of state-wide significance for its peripheral vegetation.
- supports a wide range of recreational activities (picnicking, swimming, fishing, crabbing, windsurfing, kite surfing, canoeing, kayaking and boating).
- is the aesthetic backdrop for Bunbury and Australind.
- is globally significant for its micro fauna (foraminifera diversity).
- still has extensive sea grass meadows supporting aquatic biodiversity such as molluscs, crustaceans and fish, which in turn support an active recreational fishing industry.
- has an estuarine hydrologic structure different to other local, more classic-type estuaries as there is no simple river-to-sea gradient. (Hugues-dit-Ciles, 2011b, p.8)

Reports also highlight increased salinities and other changes associated with the 'Cut' which was excavated through the peninsula in 1951 (McKenna, 2007, p. 7), as well as consistent water quality as a consequence of its location and flushing capacity. The hydrodynamics of the lower river systems of the Collie, Brunswick and Preston Rivers are determined by tidal influences to some extent but more strongly by climatic rainfall and catchment runoff patterns. Seasonal patterns include freshwater surface flows in winter replaced by a greater influence by tidal movements and saltwater intrusion in summer. However, there is nutrient loading in the estuary due to rainfall reduction which has increased over time along with greater water usage rates (Hugues-dit-Ciles, 2011b).

There are a large number of concerns about estuarine health including fish deaths occurring irregularly between 1994 and 2004; dolphin deaths in 2009 and 2010; swan deaths along Cathedral Avenue in 2010;

sedimentation; increasing acid sulphate soils, organic enrichment of surface waters; loss of fringing vegetation due to urban development and unregulated access; incremental habitat loss; decline in macrophyte biomass; decreasing biodiversity and invertebrate fauna; summer algal blooms and anoxia due to saline stratification and storm runoff of decomposing organic material. Below, Figure 2 is a graphic summarising engineered change to the Estuary since settlement.

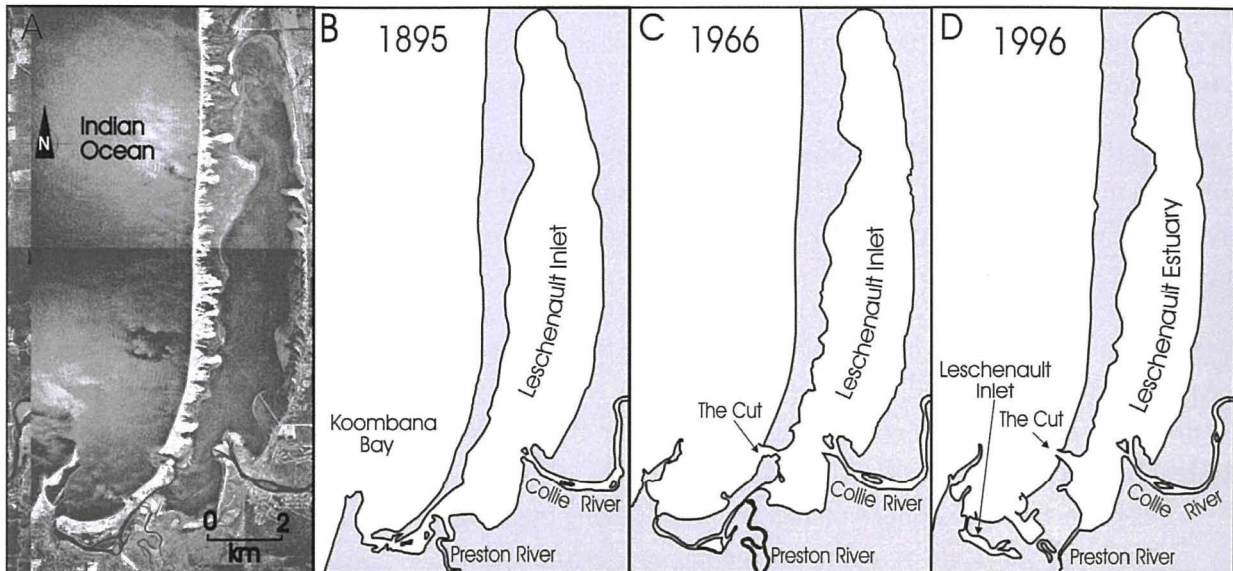


Figure 2: Engineered alterations to the estuary over time (Semeniuk, 2000).

In relation to the Leschenault Inlet, engineering the estuary into an embayment in 1951 for the new inner harbour reduced its depth and influence from the ocean, and reduced freshwater inputs. This resulted in more marine fringing and aquatic vegetation and faunal assemblages (McKenna, 2007). Nutrients are bound in sediment in the inlet. However, water quality indicates nutrients are dissipated or diluted through high tidal exchange. There is a general absence of macrophytes and connected faunal diversity and abundance due to an absence of sand in the substrate. Also there is an accumulation of heavy metals in the sedimentation as a result of urban stormwater runoff (McKenna, 2007).

Physical and Biological Values

The estuarine sections of the Leschenault Catchment are part of the Swan Coastal Plain, and three dune systems and soil types of different geological heritage characterise the area. These are the Bassendean dunes, the Spearwood dunes and the Quindalup dunes, with the Pinjarra plain and Yoongarillup complex also being present to the south east of the study area.

The Quindalup Dunes are parabolic in form and separate the estuary from the sea. They were laid down only 7,000 years ago in the Holocene and are continuously evolving through dynamic coastal processes (Brearley, 2005, p.211 and 213). The Quindalup dunes comprise predominantly white and cream sand that is calcareous and are covered with vegetation including peppermint woodland (*Agonis Flexuosa*) on sheltered slopes, *Acacia* shrubland and coastal heath (Western Australian Planning Commission, 2011). Tuart (*E. Gomphocephala*) is also present, such as at Belvedere on the estuary side of the dunes.



Kangaroo in Quindalup dunes near the Cut on the Leschenault Peninsula. Photograph: Terry Woollorton.

The Mandurah-Eaton Ridge is part of the Spearwood dune system which borders the eastern edge of the estuarine wetlands, on the northern half of the estuary. Spearwood dunes, upon which the Australind townsite is located, formed from Bassendean structures as the sea receded with the Wurm Ice Age 17,000 to 18,000 years ago to its western most point of 40 kilometers west of the present coast (Brearley, 2005, pp. 6, 7). Spearwood soils comprise deep yellow and cream coloured sands over limestone. Tuart and peppermint woodland characterize these soils (Western Australian Planning Commission, 2011).

The old, eroded Bassendean dunes are located to the east of the Spearwood dunes east of the northern half of the estuary, and eroded Bassendean soils occur to the east of the southern half of the estuary as well as in the Eaton and Bunbury townsites to the east and southern parts of the study area (Brearley, 2005, p.7). Bassendean soils comprise leached siliceous fine grey sand, with low water retention capacity and fertility. Characteristic vegetation is jarrah (*E. Marginata*), *Banksia Attenuata* woodland and occasionally marri (*Corymbia Calophylla*) (Western Australian Planning Commission, 2011).

To recap this section, a large number of reports have been completed in recent years on the Leschenault Catchment, which provide substantial information on the unique biogeography, ecology and geomorphology of the estuary. These show that whilst rainfall is reducing over time, population, water extraction, nutrient enrichment and toxicity levels are increasing over time. Whilst the condition of the Estuary is currently stable, the actual risks to estuarine health cannot be quantified. To give some sense of the contributing factors to the condition of the estuary, a short review of the social, political and economic geography of the estuary district is provided below.

1.3.2 A Short Socio-Economic Geography of the Leschenault Estuary District

Only a few studies, each with very limited scope, have investigated the place-based social values of the people of the Leschenault Estuary. Those studies show that the value of the Leschenault Estuary and lower Collie River to the people connected with it is considerable (Beckwith Environmental Planning, 2008, 2009).

This section reviews the land use and business activities of the area in order to provide a backdrop for the daily lives of the population, to enable an understanding of the activities that affect the Estuary in some way.

The southern end of the Leschenault Estuarine System is referred to as the Leschenault Inlet since there is no longer an above-ground hydrological link between the two water bodies. The Inlet is a significant feature of the Bunbury regional centre, 200 kilometres south of Perth.

The population of Greater Bunbury¹⁰ is approximately 65,000, which is projected to increase to 100,000 by 2031 (Western Australian Planning Commission, 2011). The average annual growth rate of the whole South West has been 3.1% over the past five years. The South West has the most diverse economy in regional Western Australia (South West Development Commission, 2011). The study area takes in the regional centre of Bunbury, as well as the suburban areas of South Bunbury, East Bunbury, Glen Iris, Carey Park, Picton, Eaton, Pelican Point, Millbridge, Australind, Leschenault, and the industrial areas of Halifax, Davenport and Eaton. Please refer back to plates two and three on pages 16 and 17, being maps 9 and 12 of the Greater Bunbury Regional Scheme, for a graphic representation of land use of this area.



The Bunbury Central Business District, viewed from a canoe in the Leschenault Inlet. Photograph: Terry Wooltorton.

Local government is provided by the City of Bunbury (South Bunbury, East Bunbury, Carey Park, Pelican Point, Davenport and some of Picton) together with the Shire of Dardanup (Eaton and Millbridge) and the Shire of Harvey (Australind, Leschenault and other developments north of the Collie River). The City of Bunbury boundaries which adjoin the Shire of Dardanup are shown below.

¹⁰ The population of the study area is estimated by the author to be 45,000 since the populations of Dalyellup, Dardanup, Roelands and Brunswick, included in Greater Bunbury but not the study area, would be about 20,000.

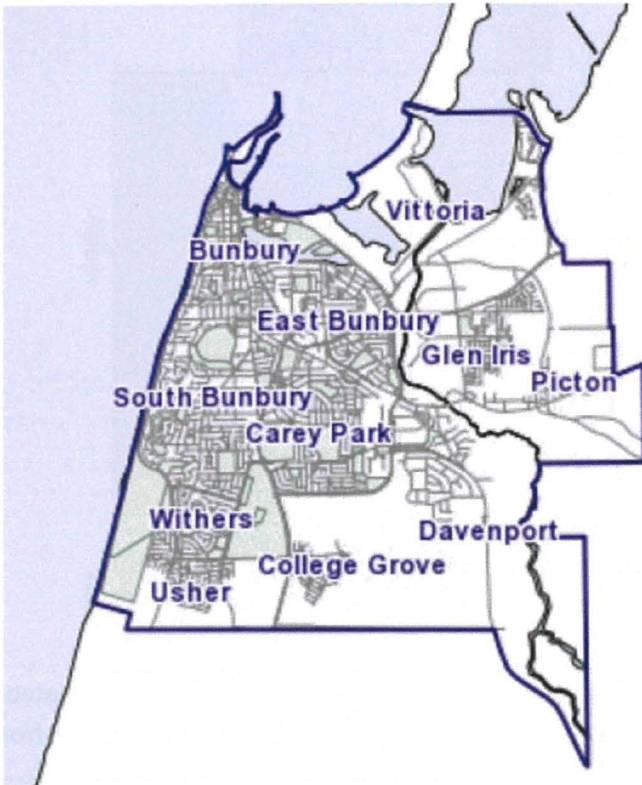


Plate 4: Map showing the City of Bunbury boundaries.
(Reference: Intramap link from the City of Bunbury website: www.bunbury.wa.gov.au).

Land use comprises bushland in the regional open space west and north of the estuary, along with agriculture to the north-west, and to the east of the fringing vegetation along the north-east. Further east is the suburban area of Australind and Leschenault. East of Australind is bushland which is zoned urban deferred, east of which is the Kemerton Industrial Park. The agricultural areas north of the estuary drain into the estuary via the Parkfield Drain. To the south east of the estuary, south of the Collie River is the Eaton townsite, south of which is the Picton agriculture area and further south is the Picton Industrial area. Around the estuary is the Bunbury suburban areas and industrial areas, south of which is the Ocean to Preston Regional Park. As signalled above further expansion of the Bunbury Port is planned, for which further engineering of the lower reaches of the Preston River will be carried out if approved (Bunbury Port Authority, 2011b).

Greater Bunbury residents are serviced by rail, road, air and bus services from Perth. A number of local bus companies provide school and commuter services while taxis provide casual transport services. Private per capita car ownership is high in the study area. Winter rain runoff from roads, gardens and other grounds is drained into the inlet and estuary, together with industrial outfall such as that from CSBP into the Preston River at Picton.



Outflow into the Preston River near the railway bridge close to the mouth. Photograph: Terry Wooltorton.

The Bunbury Inner Harbour now has direct access to the ocean and surface waters are no longer associated with the estuary as a result of engineering a different mouth for the Preston and reclaiming Vittoria Bay from the estuary wetlands in 1951. As well as being available for occasional passenger liners, the Bunbury port services the export requirements of the South West, handling alumina, aluminium hydroxide, woodchips, and mineral sands, particularly silicon sands. Goods are transported by rail from Collie or truck from other areas. The port also provides bunkering for fuel oil suppliers. Caustic soda, methanol, petroleum coke and vegetable oils are imported at the port (Bunbury Port Authority, 2011a). The Bunbury Port Authority reports that it is not a significant contributor to airborne particulates, and that the greatest particulate readings in environmental reports are due to smoke from the hinterland (Bunbury Port Authority, 2011a, p.10).

Much of the prosperity of the South West is based on its mining industries, particularly coal, alumina and mineral sands. Timber has also supported manufacturing industries, together with tourism, ecotourism, food and agribusiness. Beef and cattle, sheep and wool, viticulture, vegetables, fruit, pastures and turf as well as milk are all produced in the Leschenault Catchment, the production of all of which impacts upon the Leschenault Estuary by way of water use and nutrient-rich runoff. Plate five overleaf illustrates nutrient point sources in the Leschenault Catchment which flow into the estuary via the rivers.

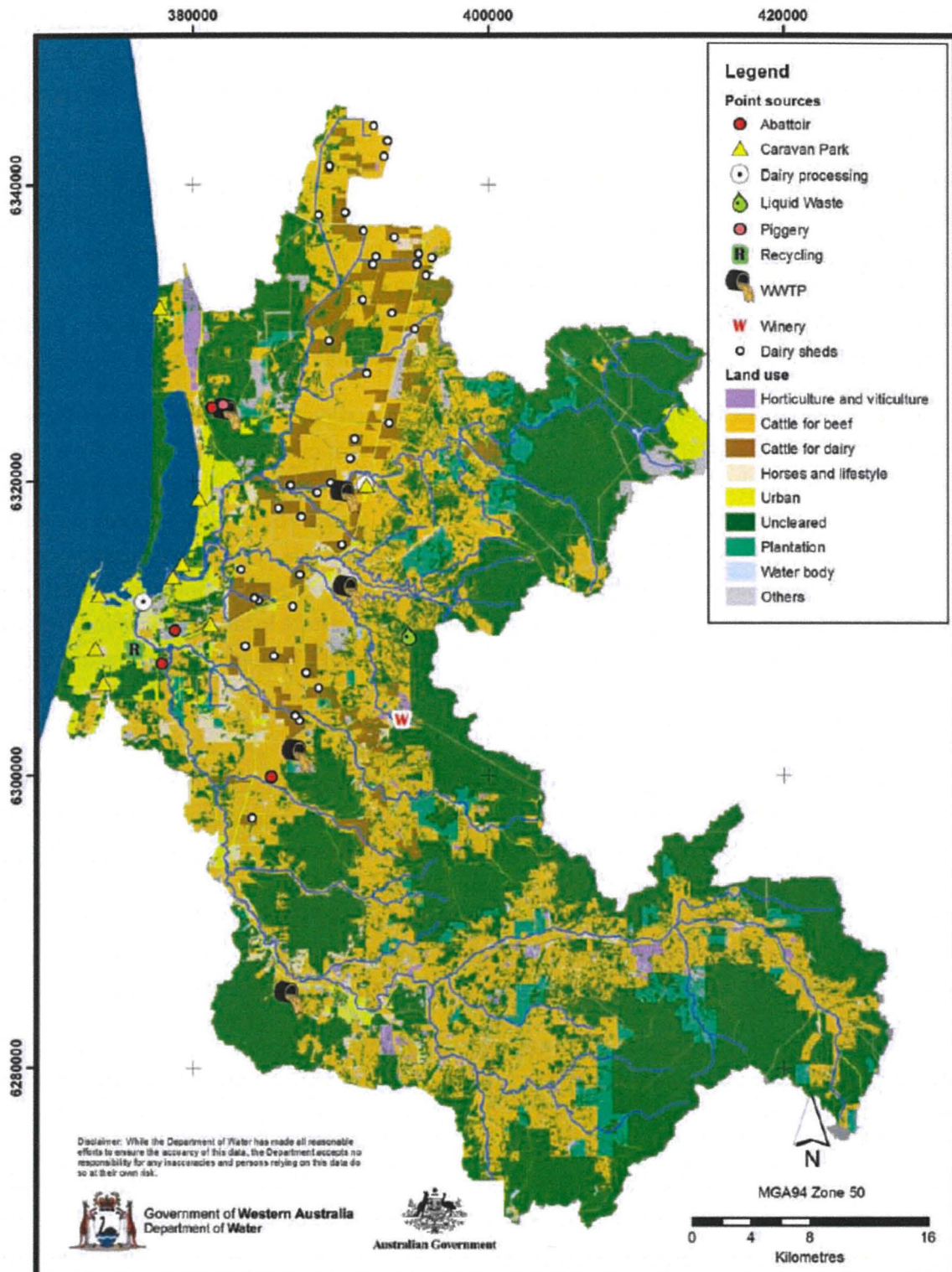


Plate 5: Land uses with nutrient point sources in the Leschenault Catchment (Hugues-dit-Ciles, 2011b, p.72).

In addition to these employers in the study area there are a range of private and government services including schools, a college of technical education, a university, two hospitals, a number of aged-care facilities, a range of government offices and there are a significant number of small to medium enterprises as is evidenced by the Bunbury Chamber of Commerce and the Bunbury-Wellington Economic Alliance.

Tourism in the area focuses on the ocean, the Estuary/Inlet and waterfront locations for recreation-related purposes. Accordingly, a range of businesses are economically dependent upon the health of the Estuary and Inlet including waterfront coffee shops, caravan parks, other short-term waterfront accommodation units, boat shops and tour boat operators. Economic values of land in the vicinity of the Estuary reflect their sought-after status.

Sporting, Recreation, Voluntary Groups and Clubs.

There is a very large number of sporting and recreation activities in the study area, many of which are water-based. These include boating, surfing and fishing, bicycle riding for which there are a range of bike paths, as well as a range of recreation clubs such as football, cricket, running and other clubs with dedicated grounds which require substantial water use. Similarly there is a full range of arts and cultural activities, events and festivals in the district held in such venues as the Bunbury Entertainment Centre and the New Lyric Theatre.

A comparatively large number of voluntary environmental organisations in the study area advocate for the environment, with a large number of people involved. A simple list of over 25 environmental organisations was recently drawn up (Gibbs, 2011), which reflects local concerns about the protection of water sources, waterways, clean air, forests, bushland, coastal areas, as well as unease about such issues as sustainable agriculture, food security, transport and energy production. The presence of these organisations and media-related evidence of their activities; the provision of government services such as funding for catchment councils, dolphin research and ecological restoration activities; real estate location choice and land values, and recreational uses of the estuary provide considerable evidence of a population who greatly appreciate their place.

1.3.3 Conclusion

This section has shown the diverse vegetation types associated with the topography of the study area and land uses. Shire councils were listed and the estimated population of the study area of 45,000 was tendered. Industries and services which provide employment and in turn services to the population and the economy, and which ultimately affect the estuary in some way, were presented. Intensification of pressure on the estuary can be anticipated due to population and industrial expansion, compounded by a range of uncertainties associated with climate change. The diagram overleaf at plate six illustrates some of the factors affecting estuary health.

In conclusion it appears that the population values the Estuary/Inlet, as evidenced by small-scale social values studies; the existence of a wide variety of environment groups; Inlet and Estuary-based tourism; enhanced land values close to the waterways and the range of businesses which are economically-dependent on the estuary. However the socio-economic activities of the population are producing an increasing stress to the health of the Estuary. This leads to the question for the next section of this study, which is: what is the history of the relationship between people and place in the Leschenault Estuary? To answer it, an investigation was conducted into the place-based socio-cultural values of the population of the Leschenault Estuary district up to the 1850s.

Factors Affecting Leschenault Estuary Health Over Time

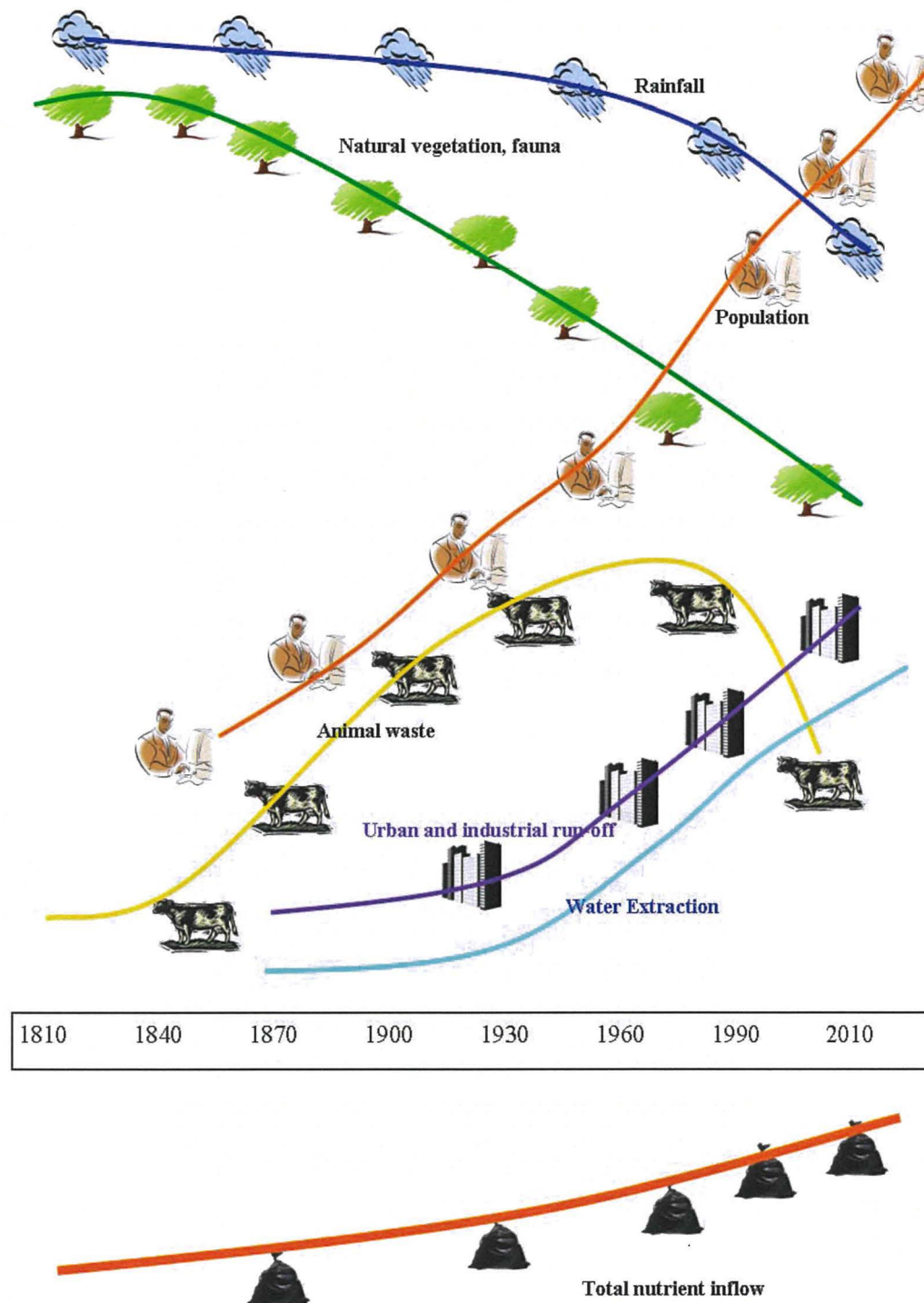


Plate 6: Visual Representation of Factors Affecting the Leschenault Estuary.

PLACE-BASED SOCIAL VALUES IN NOONGAR TIMES

This chapter presents the research method used for this part of the study, followed by a historical ethno-ecology study of the Leschenault Estuary. All Noongars share ideologies and theories of knowledge (Collard, 1994, p.14; Collard, Harben, & van den Berg, 2004). These are framed as country or *boodjar*, people or *moort* and knowledge or *katitjiny*; the three essential aspects of what it means to be a Noongar¹¹ (Collard, 2011, p.20). Although these are deeply interconnected, the demands of writing need these elements to be described one aspect at a time, which produces the appearance of simplicity when the reality is very complex. The three elements are brought together over the course of this chapter.

Unless specified all references to the Leschenault Inlet and Estuary apply to the time it was the one water body that extended from Pt McLeod (the Inlet mouth at Bunbury) to the north of Australind. The district and the waterways were called 'Leschenault' in the 1830s and 1840s (Barnes, Cameron, & Willis, 2010), so that name will be used here.



Black Faced Wood Swallow on the Leschenault Peninsula. Photograph: Chris Tate.



Avocet on Bar Island, in the Collie River mouth. Photograph: Chris Tate.

¹¹ Collard (2011) is engaged in an ARC-funded Noongar place names interpretation project. He explains that for determining meaning from place names, these aspects are intrinsic: they need to be used together.

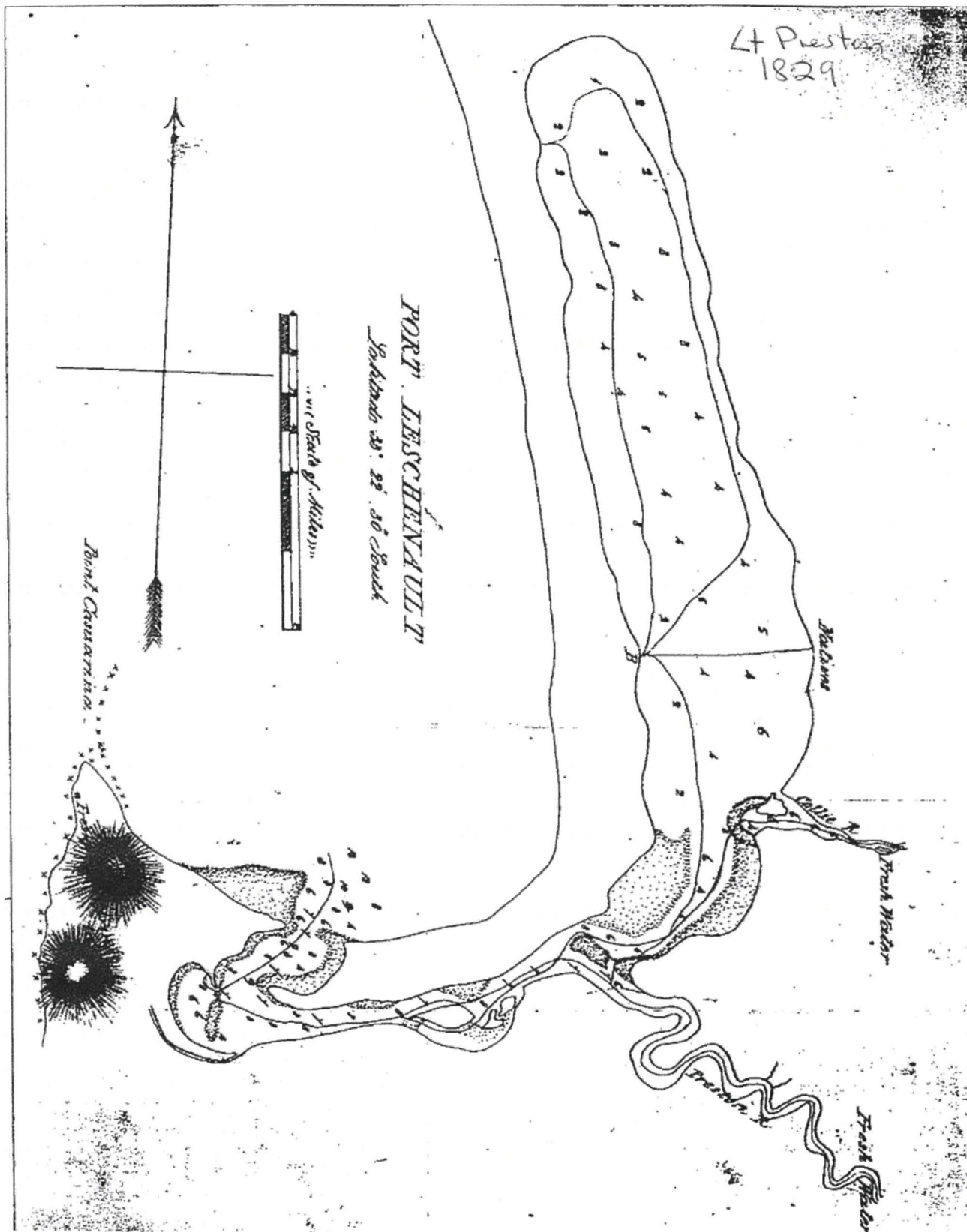


Plate 7: Copy of an 1829 map of Leschenault showing the whole estuarine water body, attributed to Lt Preston after whom the *Bila Barajillup* was renamed. Map shows locations where Noongar people were seen by Lt. Preston on his journey. (From the Brendan Kelly Collection.)

Method and Sources

To research the socio-cultural values of Leschenault in Noongar times and in colonial times, a range of key historical groups and characters were selected in an effort to represent a variety of perspectives. Selection was made using the first criteria of historical material that could be used as ethnographic data for analysis and interpretive description (Kincheloe & McLaren, 2002); and the second criteria a range of different historical perspectives and experiences to add veracity.

A weakness in this study is the lack of a Noongar authored historical account. This has been compensated for, to some extent, by the appropriate use of Noongar language¹². It has also been addressed by the use of modern Noongar perspectives, notably Collard (1994) who, after a historic study and consultation with families and elders, completed a major study of the history of the Wonnerup and Ellensbrook homesteads, which are in a similar geo-cultural area. The data gathering strategy employed with the Noongar material in the current document was for information from Bates (1985) to be included when it was commensurate with perspectives provided by Collard (1994, 2011), or not contradictory to the information in the journals of Bunbury, Wollaston and Clifton, thereby increasing the likelihood of its historical accuracy. The historical identities are introduced below to contextualise their accounts and show the likelihood of distortion.

Baaburgurt, Yabburgurt and Nyalyert were three of the old Noongar men who lived in a camp for Aboriginal people on the outskirts of Perth during the period 1904 – 1912, when Mrs Daisy Bates spent considerable time living with and learning from them. By virtue of the territories that they had been born into, lived in and had visiting rights to, which included the land from near the Harvey Estuary to the Capel River, each of them was qualified to provide reliable information about Leschenault. The group of elders included Ngilgi, a woman from the Wonnerup/Busselton area who also would have been able to contribute valuable information on her neighbouring area. There was also a person from Bunbury who, very unfortunately, was not identified by Bates (1985). Each of these people lived traditional Noongar lives, and their memories comprised the pre-colonial and early colonial years. Bates recorded South West socio-cultural knowledge; including some specific place-based ecological knowledge (1985, pp.11,34,52). Bates' work with this informant group was selected for inclusion in this study due to the quality of the written detail of their accounts.

Bates' first-hand observations are regarded as accurate by modern anthropologists such as Isobel White who edited her work however it is important to take into account the colonial, hierarchical attitudes about society through which she interpreted the information. Social Darwinism formed her unquestioned views on social evolution, and she had a dislike of the people she called 'half-breeds' (Bates, 1985, pp.21,2).

The reports and journals of Marshall Waller Clifton, a leading 1841 Australind property developer (Barnes, 2001; Barnes et al., 2010), have been used because of their almost daily regularity and the clerical quality of his observations and reflections. His journals are primary historical documents, which have been painstakingly transcribed by historian Phyllis Barnes into over 700 annotated pages. Similarly, the journals of John Ramsden Wollaston, Anglican vicar, have been used due to the almost year-round observations of life in Bunbury on the banks of the lower Preston River. The main benefit of the journals, particularly Clifton's, was the large number of indirect or 'throw-away' comments – the stories between the lines, captured within

¹² The author of this current study, Sandra Wooltorton, speaks contemporary Noongar language (Wooltorton, 1993).

the writers' other intended meanings. The second reason their Noongar references were useful was simply because records were made available of Noongar people in particular locations at specific times of the year.

Bunbury's journals were written during (or just after) journeys with Noongar guides back and forth from Pinjarra to Vasse in 1836 and 1837. Bunbury spoke basic Noongar language and his accounts are lucid and descriptive. His journals have been chosen for their first-hand observations with the first people of Leschenault prior to settlement, in the context of the ecology of the place. Bunbury was constantly accompanied by Noongar guides who showed him the place and gave him detailed explanations, so his accounts are quite specific about places and Noongar technology. In this study care was taken with the use of his journals, to account for the large cultural differences between the Noongar life-way and Bunbury's colonial worldview.

Bates' work was a valuable source because she asked the characters deliberately planned anthropological questions about their culture. However there are several disadvantages to be considered when using her work. Firstly, at the time of the interviews her informants had been exiled from their *boodjar*, or 'country' (see below), possibly for many years. This does not detract from the accuracy of their accounts however, but it needs to be taken into account because they were 'telling rather than showing'. Secondly, Bates' questions seem to have inquired about culture as if it was generalised rather than place-based. This limits local examples¹³, nonetheless there are ample to make the points in this report. Thirdly, Bates believed that women did not have unique cultural knowledge and so did not ask questions of women about this, so there are large gaps in her material. Nonetheless she spoke Noongar and her material is descriptive, rich and meaningful. With the benefit of hindsight, her work is priceless as it allows a picture of the relationship between people and place to be reconstructed, then authenticated using the primary accounts of the observations of the settlers.

In summary, the method comprised ethnographic analysis of historical sources selected for primacy where possible and directness of observation. The accounts of Wollaston, Clifton and Bunbury were valuable because of the descriptiveness and careful, almost daily observations of life. The work of Bates was valuable as it is based upon her methodical inquiries into the culture of the region.

An ethno-ecological account of the Leschenault people at the time the area was known as *Elaap* is presented next. The following section aims to reconstruct Noongar life to show the nature of the relationship between people and place. It uses the three sections of Collard's (2011) framework, place, people and knowledge. Its purpose is to highlight place-based socio-cultural values and to present an account that shows that people have *always* lived here. This study offers only a beginning – a glimpse through a window into another time and a different way of seeing the Leschenault District.

¹³ Some writers (for example Le Souef, 1993, p.6) say that studies of Aboriginal social organisation are non-sensical without geographical context. This critique has been considered with the use of each citation.

2.1 *Elaap* –*Karlaboodjar*¹⁴: Home Place

The Noongar meaning of *Elaap*¹⁵ is ‘on or by the water’ (Collard, 2013). In South West coastal areas, *Derbal* means estuary; where the fresh and salt waters meet. *Elaap* is the name of the first people of the Leschenault District, and the name of the district (Barnes et al., 2010, p.33). *Derbal Elaap*¹⁶ was the original name of the Leschenault Inlet. *Boodjar* means nourishing terrain¹⁷, a concept like country that includes people and ecosystem.

This section presents *Elaap* – the place. It is presented in three subsections, which are people (*Elaap*) and place (*boodjar*); territory (*karlaboodjar*) and estuary (*derbal Elaap*). According to Bates’ informants (1985, p.34), all coastal people were Wardandi¹⁸, or people of the ocean. People were also known as *Bilgur*¹⁹ (river people), *Derbalung* (estuary people) or *Buyun-gur* (hill people²⁰). In addition, collectives of people were known by their directional location. Bates writes that Bunbury people were known as the Western or *Kunniung*²¹ Bibbulmen²², and their language was *Burong*²³ *Wongi*.

Coombarnup or *Gomburrup*²⁴ was a name for the Bunbury area (Bunbury, 1930, p.15; Bussell, 1930s; Sanders, 1975, p.1), and according to Bussell (1930s, p. 8) was originally the area now known as Koombana Bay. However in 1905 when Bates was carrying out her research, it seems likely that she was not aware of

¹⁴ Noongar words cited as part of a quote have been written as per the original document. However where the same words are used in the text of this report, they are spelled as per the orthographic standards of the Bunbury Noongar Language Centre. For example Moore’s (1850) *kallabudjor* is spelled as such in citing Moore, but in the text of this report as *karlaboodjar*.

¹⁵ In the context used in this report.

¹⁶ Note how Lieut. Bunbury refers to the Wonnerup Estuary in his conversation (presumably spoken in Noongar) in the north east of the district whilst on route to the hills. In his use the word order is Anglicised – generally in Noongar the noun (eg. *Derbal*) is followed by the adjective (eg. *Wonnerup*).

I soon halted and held up my hand in token of amity and to show I was unarmed and told them I was Bunbury who had a mia [hut] at Pinjarrup. Upon this the whole party soon collected about us when I introduced them to Wolgot as a Native from the **Wonnerup *Derbal*** and to Parker the Soldier; (Bunbury, 1930, p.162. Emphasis added.).

¹⁷ Nourishing terrain is a notion used by Bird Rose (1996), to describe an Aboriginal understanding of land.

¹⁸ Bates used the spelling: *Waddarn-di*, but the modern spelling is used here. The word is not italicised in-text because it is in common use.

¹⁹ Until recently there has not been a consistent orthography used by the various historic recorders of Noongar words. Hence not only do words vary according to the Noongar dialect of the speaker, but they were heard and recorded through the ears of settlers who themselves used a range of British accents and therefore could have recorded the same-sounding word differently. In this study Noongar words will be spelled the same way as the reference being cited, and at all other times it will be spelled according to conventions in use by the Bunbury Noongar Language Project.

²⁰ *Boya* means rock, stone or hill.

²¹ These days the Noongar translation of West is spelled *Kaneang*.

²² Bates (1985) used the appellation: *Bibbulmen* to refer to all Noongar groups.

²³ *Burong* means to bring or fetch (Bates, 1985, p.47). *Wongi* is now spelled as *Wanginy*.

²⁴ The spelling used for the remainder of this document will be that used today, *Goomburrup*, and it will not be italicized as the term is in common use.

historical records from the 1840s which refer to the *Elaap* people of the estuary district that was also known as *Elaap*.

Several historical documents refer to the *Elaap* people including Wollaston (1991, p.171), Roth²⁵ (1902, p.45) and Clifton in his report to the company (cited in Barnes, 2001). Unfortunately the *Elaap* people were not represented on the tribal and language maps by Tindale (1974) or Horton (1994), and neither were the *Undelup* people of the Vasse. Both groups were acknowledged by Clifton (who lived in Australind), as shown in the quote below:

In the district within 60 or 70 miles round us there appear to be but four tribes. Our immediate tribe bears the cognomen of the 'Elaap' Tribe, from their headquarters being at 'Elaap', which is the land immediately at the entrance of the Inlet up to the River Preston. They appear to be the least warlike and best disposed of all the tribes we hear of. The tribe adjoining northwards is the Murray Tribe or 'Pinjarrup' Tribe and are the fiercest and most warlike, but they are at such a distance that we seldom hear of them. To the eastward is the Mountain Tribe²⁶ who possess the darling Range And to the southward, the 'Undelup' or Vasse tribe²⁷ who are generally peaceable ... (Barnes, 2001, p.33).

This shows that the places now called Marlston, Bunbury CBD, East Bunbury, Wollaston, Rathmines, the Bunbury Inner Harbour and Vittoria are part of what was previously known as the *Elaap* district (Barnes, 2001, p. 33). Since Clifton lived in Australind, it also points to the likelihood that the whole of the Leschenault District was *Elaap* 'country'.

2.1.1 *Elaap* – *Boodjar* and *Moort* (Place and Family)

Boodjar is a Noongar word similar in meaning to country but not a translation of it, because *boodjar* is a broader concept that includes ecosystem with place, in which human culture is intertwined. The Noongar word: *boodjari* means pregnant; or full of new life. So the idea of *boodjar* can be understood as 'nourishing terrain' (Bird Rose, 1996), as landscape which is alive and full of life. For *Elaap* people, nature and culture were related parts of the same concept. That is, people and place were interdependent in the sense of caring for each other. Place was valued for its nurturing qualities and because of its embeddedness in culture.

Particular families were obliged by birthright to care for landmarks such as rivers, estuaries or waterholes; for example by transporting the fire stick for summer burning (Bates, 1985, p.49; Collard, 1994, p.25). This area was their home or *karl*²⁸, or *karlap*. *Karl*, fire, is also the Noongar word for home. One's *karlap*, (home;

²⁵ Roth also refers to the place by the same name, which he spells *i-lap*.

²⁶ Whilst in the final editing phase of this report, in a conversation at Boulders Heights (Bunbury) looking east towards the Collie Hills, Troy Bennell advised the author that his old uncle talked about the linkage between the Bunbury people's land and the Collie people's. He said from Bunbury at night, looking up to the Coalfields Highway in the days before it was straightened, the crossing was where the highway used to bend to the south and car headlights went out of sight (personal communication, late April 2013).

²⁷ Also in the editing phase, Debra Bennell (personal communication, late April 2013) said the Capel River was the linkage between Bunbury and Busselton people.

²⁸ *Karl* as a direct translation also means fire. It has a broader meaning than just this English language sense, however. Since people could only fire their specific family-owned *boodjar*, *karl* is also used in reference to

place of fire) is the place one must accept responsibility to care for. Only the owner can burn. Moore defines *karlap* (which he spells as *kallip*) as follows:

a knowledge of localities; familiar acquaintance with a range of country, or with individuals. It was also used to express property in land (1850, p.54).

Similarly, *kallabudjor*²⁹ was property in land (Moore, 1850, p. 54). *Kallipgur* (*karlapgur*) were members of the same ‘fire-place’, hearth or home. That is, *karlapgur* were kindred with each other and place (Bates, 1985, p.48). *Karlap* was cherished as home with home-hearth-heart values; and the *Elaap* people were the *karlapgur* for the district known as *Elaap*, around the water body now known as the Leschenault Inlet.

The people’s lifeway valued and honoured place. The *Derbalung*, who are people of the estuary, used a round, cyclical³⁰ sense of time when living with *Elaap*’s seasonal rhythms and flows. In this way *boodjar*, together with tradition and the seasons, determined people’s daily activities. This was a geopolitical³¹ kinship system, in which the kinship system prescribed the relationships between people and particular species or individual animals or trees, and bonded them to place. The seasons were recorded by Bates (1985, p.240) as follows:

Noongar Name	English Translation
<i>Mokur</i>	Winter – about June and July
<i>Jilba</i>	Spring – about August and September
<i>Kambarong</i>	October and November
<i>Beeruk</i>	Summer – about December and January
<i>Boornor</i>	Early autumn – about February and March
<i>Winyarung</i>	Autumn – about April and May

Table 1: Noongar Seasons (Bates 1985).

Collard (1994, p.25) writes that clear responsibilities and rules were the basis for the Nyungar³² land system; and trespassing, theft of food or firing of other Nyungars’ country without permission from the owners were unmistakable breaches of land laws. When journeying across others’ territory it was expected that travellers would only take enough meat and vegetables to feed themselves, however in times of profusion invitations were given to neighbouring groups to share in the abundance (Collard, 1994, p.25).

this location. That is, *karl* also includes the English sense of ‘the home hearth’, and for Noongar speakers this described a place rather than a building (Moore, 1850, p.53).

²⁹ *Budjor* and *putjar* are the same word with different original writers. The Bunbury Noongar Language Project stipulate the spelling as *boodjar*. When citing the original historic text, that spelling is reproduced.

³⁰ Rather than the linear sense of time which underpins economically oriented societies such as those labelled ‘first world’ or ‘developed’ including Australia today.

³¹ Geopolitical means that “geographic location is one of the major determinants of social and political identity, thought and activity” Collard (1994, p.15). It is important to acknowledge the geopolitical nature of Noongar theories, attitudes and beliefs (Collard, *ibid.*).

³² Collard and a number of other writers spell *Nyungar* this way.

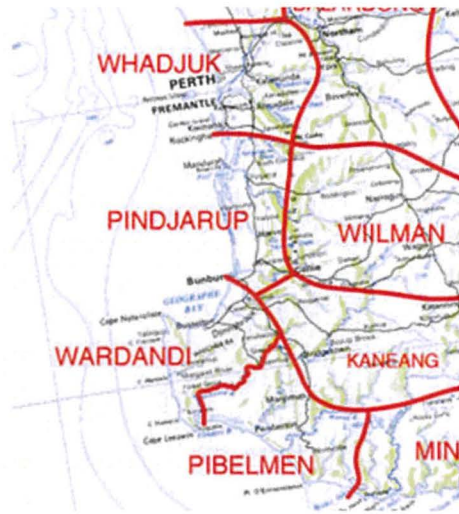


Plate 8: Map of South West Section of "Tribal Boundaries in Aboriginal Australia" (Tindale, 1974).

The map has been included to show that the southern boundary of the *Pindjarup* territory is often represented as subsuming the Leschenault District. However it is likely that this map has covered over the *Elaap* people's *boodjar*.

2.1.2 *Elaap* – *Boodjar*: Territory

Tindale's map (section shown here in Plate 4) appears to be imprecise. Referring to his own map, Horton (1994) states: "This map indicates only the general location of larger groupings of people... Boundaries are not intended to be exact". It is interesting that in reference to the Leschenault District, Tindale's and Horton's maps are contradictory. Tindale shows the people of the area being *Pindjarup* whilst according to Horton the *Kaniyang* lived to the north and east, and the Wardandi lived to the south with Bunbury being on the boundary.

Adding to the picture of the geographic location of the *Elaap* people, the following lines in Bunbury (1930, pp.11-13) indicate that *Monang*, a *Pindjarup* Noongar man from the Murray district, was out of his usual territory when travelling south of the Harvey Estuary, however the area is still well within the *Pindjarup* people's territory according to Tindale's map. Thus it is likely that the southern extent of the *Pindjarup karlaboodjar* and the northern extent of the *Elaap karlaboodjar* were in this vicinity, as shown:

...the 15th December we crossed the ford of the Harvey [Estuary] & proceeded on our course varying from SSW to S by W... After crossing several miles of poor useless country we came amongst low hills of barren sand covered with Mahogany of considerable size mixed with a few of the coast White Gum which indicate the presence of lime stone. Leaving on our left Cannasiup, an extensive swampy Lagoon with pretty good feed round it, and thickets of large tea trees and high spear rushes on the borders, we crossed the range of hills diagonally³³ to the right & then proceeded along the Western edge of a thick but narrow belt of swamp running between two parallel ranges of hill & containing immense tea trees, with flooded Gums & a large quantity of large & beautiful grass trees under which was abundance of good grass. We halted at length in this hollow at a place where feed was abundant & by making a small well we obtained water but Monang was now out of his reckoning and fairly stated that he did not know where [where] we were as he had always kept nearer the coast (Bunbury, 1930, pp.11-13).

³³ All spelling errors in the journals are reproduced here.



These two images of landscape are similar in appearance to that described in 1836 by Bunbury (1930, pp. 11 – 13).



Photographs were taken about 7km north-north east of the Estuary by Terry Wooltorton.

Whilst it may not be possible to demarcate the *Elaap* people's territory with certainty, Gerritsen (1998 p.5) also lists Ommaney (1840) as referring to the *Elaap* people. However Bunbury (1930, p.8) referred to the people on the north bank of the Collie River as being a different 'tribe'³⁴ to the people who had met him to the north of the Estuary. On the other hand Clifton, who lived in Australind, wrote that there were only four 'tribes' in the area when he referred to the *Elaap* (in Barnes, 2001, p.33). On this occasion, because he stayed much longer than Bunbury, Clifton's reference will be preferred until further evidence becomes available.

2.1.3 *Karlaboodjar Elaap*: Leschenault

It can be concluded that the *Elaap* land referred to by Clifton (above), being from the mouth of the Inlet to the area around the lower Preston River, was *karlap*³⁵ for the *Elaap*. Similarly the other two 'tribes' referred to by Bunbury, one group north of the Estuary and another group north of the Collie River, were most likely gatherings or groups of different *Elaap* people. Further evidence for this proposition is a statement by Robert Austin, a surveyor for the Australind settlement: "Each family in the tribe had its own territorial division, its own ka-la or 'fire-place'..." (Cited by Roth 1902, p. 55, in Hallam, 1975, p. 43). That is, the whole district known as Leschenault to the colonials was 'home' for the *Elaap* people, with each different group having their own *karlap*. Using the sources cited in this document, the northern crossing with the *Pindjarup* people was somewhere in the vicinity of Binningup and the ford of the Harvey River, the eastern crossing with the Collie people was midway down the hills where the Coalfields Highway used to bend southwards, and the southern crossing with the Undelap was south of Dalyellup, most likely somewhere around the Capel River.

³⁴ The word 'tribe' is problematic as it seems to be understood differently by the various writers. This reference could mean group of people, crowd or mob, whereas others used the term in the sense of a people who are culturally and linguistically different.

³⁵ *Kallip*: property in land to which one was obliged to care for (Moore, 1850, p. 33)

2.2 Moort Elaap – Living In Relation to Boodjar

This section develops the idea of living with a deep sense of connection between people and place. There are three parts. The first develops the notion of place as nourishing terrain by providing a description of typical daily activities which utilise the idea. The second explores in more detail the notion of inter-relationship between people and place by investigating the arts for storying place; while the third considers ways in which place is honoured over a lifetime.

2.2.1 Ecological Knowledge of Boodjar – Nourishing Terrain

A sense of the daily activities, predispositions and embodied knowledge of the *Elaap* people can be gained by reflecting upon some of the observations of journal writers such as Bunbury. For example:

...the lighter one travels the better, for cover one small blanket or cloth cloak is quite sufficient as in case of rain one can in a few minutes make a hut of boughs or grass tree leaves the latter of which, properly made in the Native fashion is impervious to any rain, as it throws off all the water even when so thin that the light is seen through (Bunbury, 1930, p.1).

This comment by Bunbury highlights the art and effectiveness of the Noongar *maya* (hut) for living with the weather, an inclination to travel and live 'lightly', and a confidence in skill, ecological knowledge and environmental provision to attain needs with ease.

Below, Bunbury's writing gives a sense of the appearance and use of huts in an *Elaap karlamaya mandjar*³⁶:

I left the Camp at the Preston ford very early and reached the border of the Estuary about five minutes after sunrise and found myself just in rear of a double line of comfortable bark huts about fourteen in number, with thick smoke curling up from before each, showing that their fires had been renewed, but none of the inmates were stirring and very right too as it was a cold raw morning with heavy hoar frost late in May (1930, pp.158,9).

An enhanced idea of the capacity of the huts for provision of warmth through the active role of the fire-keeper is illustrated in this quote.

Whilst the same *karlamaya mandjar* were returned to after journeying away, the huts were generally reconstructed for each new use. The routine was described in an account by Bussell:

Strange to say, when they were traveling back the same way that they went, they would never use the same huts as they stood but take them down and use most of the material to build huts a little away from where the others stood[.] if their huts were roofed with paper bark, they would use it quite often but if with black-boy rushes, they very seldom used the same again as they reckoned when the greenness went off them they were not much good (1930s, p.2).

A further glimpse into the day-to-day of a *karlamaya mandjar*, this time on the northern end of the estuary, can be gained from the following account. Note the comment: "the constant presence of considerable numbers" (1930, p. 21) and the "numerous & well beaten paths", giving some indication of enduring tenancy:

There were several signs of their being very numerous in this neighbourhood, principally owing to the facility of obtaining fish a wholesome plentiful food which evidently much encourages the increase of population amongst these Tribes. The numerous & well beaten paths near the banks of the Estuary indicated the constant presence of considerable numbers, indeed nowhere had I hitherto seen ... such distinct paths or so many groups of deserted huts as here; some of them made

³⁶ *Karlamaya mandjar* means 'homes together with relatives'. The nearest English term seems to be village which is not an accurate description, and neither is camping ground. So a Noongar description is used. *Maya* and *koornt* are small huts or shelters.

with some care of the paper Bark i.e. the bark of the Tea tree or else of the leaves of the Zanthoria, which afford excellent protection from rain but are not so warm as the others (Bunbury, 1930, pp.21).

It is clear from this record that the paper bark huts (*maya*) were constructed for warmth, whilst the xanthorrhoea (grass tree) huts were developed for use when water-proofing qualities would be required. This record also makes clear the numbers of people together with the nourishing qualities and life-fullness of their place.

There are records of wells built and used. For example, while travelling on the north bank of the Collie River in early 1831, William Kernot Shenton and his party: "fell in with natives who gave us water from a well near the second island" (cited in Staples, 1979, p.7). Bunbury also referred to obtaining assistance from his guides to locate a brackish-water well on the north-eastern bank of the Estuary (1930, p.21). This shows evidence of planning and provision for the stability of ongoing accommodation.

There were several large groups of people residing at various places around the estuary when the first colonials arrived. Bunbury (1930, p.8) wrote of meeting over 350 people on one day, two hundred of whom were living around the northern extent of the Estuary and another 150 people on the north bank of the Collie River "assembled to receive us". Both Grey (whose work was cited by Staples, 1979) and Bunbury (1930, p.24) refer to groups of 150 people. This is further evidence of the nourishing qualities and fecundity of the place, as all of these people were having their needs met for food, clothing and accommodation.

Clothing was made of kangaroo skin cloaks, or *bwok*. Bunbury provides an excellent, lengthy³⁷ description of the appearance, detail in manufacture and wearing of these.

The only clothes worn by any of the Natives of Western Australia that I have seen is the "booga" or cloak, made of Kangaroo skin. They generally use & prefer the skin of the female Kangaroo Waroo", as being softer & closer in texture & finer than that of the Male "Yowert" & I have also though very rarely seen skins of the Brush Kangaroo & Wallobi used by them, which are the prettiest by far, with closer fur, of a grey color inclining to white at the tips, which gives it a silvery hue (1930, pp.10 and 11).

Fishing provided a major food source and recreation for the *Elaap derbalung* (people of the estuary), for much of the year. For brevity, only short quotes are included here to give a sense of the biodiversity and fishing methods used:

...It is very interesting to watch a party of men pursuing a shoal of Mullet in shallow water, endeavouring to cut them off from the deep parts & following with unerring sight the course of the fish under water until they get within reach to throw the spear which they generally do without the "Mero" [spear thrower] & with excellent aim. It is an exhilarating sight & favourite sport with the young men the Mullet being considered by them the best fish they have, being very fat. They also spear on the flats great numbers of cobblers ...

Mullet are also caught by the Natives in immense numbers by means of weirs at the mouths of little salt water creeks which are left open for the tide to rise with which vast shoals of Mullet principally small fry enter & the weir being suddenly stopped up, they are either caught as the water filters off with the ebb or oftener by the women who are sent in to drive the fish with their hands into corners

³⁷ There is a need for brevity so only a small quote is reproduced here, however an extended quote which articulates the technologies and skills used in coat-making (or quote-making) is presented at Appendix Two. Bunbury's full journal with annotations is soon to be published by Phyllis Barnes.

where they are easily taken. I know nothing sweeter than these fish are in April & May when they are caught in this way, & cooked Native fashion on hot ashes, the small fry bolted whole. About Gombonup I remarked the way in which a large fish is cooked by them, such as a Taylor or Jew Fish and a capital plan it is. The fish having its scales scraped off is wrapped in thick folds of tea tree bark which should not be from the outside so as to burn readily, this is then covered up in warm sand & ashes not too hot or with any lumps of live fire, & left to bake when it come out beautifully cooked & with a very agreeable acid imparted by the bark. The more common & simple way of cooking fish is like their plan pursued with any meat, to throw it on to the fire & cover it up with hot ashes till it is done enough & enough in most cases means half raw. But two or three turns on the fire are sufficient to loosen the scales which then come off with great ease & the fish is thrown back to cook... (Bunbury, pp.44-46)

Activities associated with fishing and provision of food from the estuaries, creeks and rivers shaped the *Elaap* rhythm of life. There were many little salt water creeks³⁸ where the *Elaap* made weirs around the Leschenault estuarine waterways. Respect and care was given to creatures through kinship ties, increase-type ceremonies at the start of the season and dancing and story-telling at the end of each day. Further detail is provided later in this chapter.

In the annual cycle, 'fire-stick farming' was used for kangaroo grazing (Hallam, 1975) and was highly significant to Noongar culture and relationship with place. Wollaston illustrated the practice:

The Bush fires (wh this year have been most extensive) are caused by the natives, either accidentally or intentionally. – If the latter, it is for the purpose of driving the animals & reptiles into one spot, or the margin of some river or swamp, where they become an easy prey. – The burnt ground too sends up in the rainy season a sweeter crop of grass wh attracts the Kangaroo (Wollaston, 1991, p.136).

Fire was an integral part of this Noongar place.

The *Elaap* lived in direct relationship with place in such a way that needs were met from their rich, plentiful environment with considerable ease, by using substantial well-cultured ecological knowledge along with technological skill. The references to the weather-proof hut construction, *karlamaya mandjar*, water wells, clothes-making, travelling lightly, fire-stick farming, variety of techniques for fishing and numerous carefully-used paths illustrate a great depth of ecological-technical knowledge about place. This illustrates the life-sustaining values of place for food, shelter and freshwater as well as recreation values. It also gives a real sense of the blending together of human body and place by adaptation, for example capacity to withstand cold in winter.

It would be tempting to interpret this as a life-style based upon simplicity however the knowledge-base developed to enable daily living was highly complex and sophisticated. It relied on finely-honed place-based observational and perceptual skills and a logic informed by a holistic-ecological worldview. It also relied on a cyclical, seasonally-based conceptual framework for interacting with, storying and explaining the 'world'. This will be considered in the following section.

³⁸ Plates 14 and 15 of this report show creeks around the Inlet.

2.2.2 Dancing Up Nature – Kinship With *Boodjar*

Noongar people have always understood themselves to be integral to place, including relationship with particular more-than-human³⁹ species as well as human relatives. Kinship systems and family groups were said to be established by the creation beings which linked people to each other and place. The laws governing these relationships were handed down through artworks, dances, stories and songs since the great-grandparent ancestors (Collard, 1994, p.26). In this way, place was imbued with ontological⁴⁰ values – people existed because of and together with place. The Noongars would say that this connection to place has been continuous since the dreamtime or *Nyitting*, or far, far back in the cold times⁴¹ when the great stories began.

Noongars were a happy, contented people with a “light-hearted, joyous disposition which takes refuge in song and dance on every possible occasion”, noted Bates (1985, p.314). Many examples in Bunbury’s journals support this comment, for example: “As we advanced [southwards along the eastern foreshore of the Estuary] party after party of Natives joined us, hallooing screeching & receiving us with most boisterous symptoms of joy” (1930, p.27). Some Bibbulmun *kening* (dances) originated in the *Elaap* district. Dances were created in all Noongar places, and sometimes at gatherings they were passed on to other groups. These included dream dances, war dances and animal and bird dances which mimicked the manners and habits of an animal or bird. Dances were always energetic and vibrant; they were “entered into with a zest that never varies” (Bates, 1985, p.314). Dressing for the dances included adornment with bird feathers in the hair (often cockatoo: *manitj*) by young men in particular. This being said, it is important to also remember that punishments were strictly and swiftly applied in the event of transgression of any law (Bates, 1985, p.77; Collard, 1994). In other words, Noongars were spontaneously cheerful people who respected and abided by the rule of law.

Music, drama and dance are elements involved in each Noongar dance meeting (Bates, 1985, p.314). Sometimes, dances were planned and invitations sent by messenger with message stick to most or all of the *Birdiya* (elders or leaders) of the South West to invite appropriate respondents from among their members. These big meetings were very popular in seasons of plenty. For example when the red-gum flowers, totemic dances in the Vasse and Capel areas (and most likely the *Elaap boodjar* as well), were held to increase the numbers of sea mullet and salmon. In Bates’ words: “At certain times in the year the rivers and estuaries of the Southwestern districts swarm with sea mullet and salmon which come in for spawning” (1985, p.325). Weirs made from wire grass were constructed to net the fish, and the evening before the fish were collected, people of the mullet and salmon totem sang for the fish (Roth, 1902). While the recitation continued, the dancers performed the actions of the fish moving towards their spawning grounds.

³⁹ ‘More-than-human’ is a term used increasingly by ecological philosophers since Abram (1996) to refer to humans *and* others; rather than to imply that humans are separate from ‘non-human’ others – a term which also implies human superiority.

⁴⁰ Ontology is a term used in philosophy to mean the nature of existence and reality, or ‘being’. In Noongar, this value system is *Koorndarm Katitj*. It means knowledge about how and why things are the way they are (Collard et al., 2004).

⁴¹ The *Nyitting* is so far back it refers to before the last ice-age, before the world was humanised (Collard, personal communication, 2013).